RAIN BIRD®

2012 Golf Product Catalog

40 Years in EUROPE 1972 • 2012

Caesaria Golf Club, Israël

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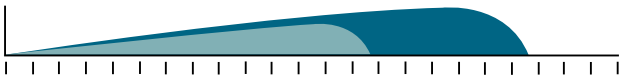
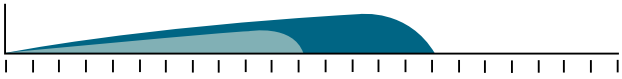
Golf Rotors Line



900/950 EAGLE™ Series

19,2 m to 29,6 m



700/751 Rain Bird® Series

10,7 m to 22,9 m

351B Short Throw EAGLE™ Series

5,5 m to 17,1 m

EAGLE™ 900/950 Series

Specifications

- **Radius:**
  – **900 Series:** 19,2-29,6 m
  – **950 Series:** 21,3-28,0 m
- **Flow rate:**
  – **900 Series:** 1,35 to 3,60 l/s ; 4,85 to 12,97 m³/h
  – **950 Series:** 1,23 to 3,75 l/s ; 4,43 to 13,49 m³/h
- **Arc:**
  – **900 Series:** Full-circle, 360°
  – **950 Series:** Adjustable 40° to 345°
- **Models:**
  – **EAGLE 900/950 E:** Electric valve in-head
  – **EAGLE 900/950 S:** Stopamatic® (SAM)
  – **EAGLE 900/950 IC:** Valve in-head, IC module
- **Maximum inlet pressure:**
  – **Models 900/950 E, IC:** 10,3 bars
  – **Models 900/950 S:** 6,9 bars
- **Pressure regulation range:** 4,1 to 6,9 bars
- **Factory pressure settings:** 5,6 bars
- **Body Height:** 34,0 cm
- **Pop-up Height to nozzle:** 8,3 cm
- **Top diameter:** 17,8 cm
- **Nozzle Trajectory:** 25°
- **Standard nozzle:**
  – **900 Series:** # 60 black
  – **950 Series:** # 28 green
- **Inlet Threads:** 1,5" female ACME
- **Holdback, models S:** 4,6 m elevation
- **Rotation Time:**
  – **900 Series:** 360 ° in 240 seconds; 210 seconds nominally
  – **950 Series:** 180° in 120 seconds; 105 seconds nominally
- **Maximum stream Height:** 6,1 m
- **Solenoid, E models:** 24 VAC 50 cycle solenoid power requirement
  – 0,41 amp inrush current (9,9 VA)
  – 0,30 amp holding current (7,2 VA)
- **Top-serviceable rock screen™ and replaceable Valve seat:** All 900/950 models E, S, IC

900 Series

How to Specify/Order:

900 - X - XX - ACME

- **Model**: 900
- **Body/Valve**: E, S, IC
- **Nozzle**: 44 - 48, 52 - 56, 60 - 64
- **Thread Type ACME**

950 Series

How to Specify/Order:

950 - X - XX - ACME

- **Model**: 950
- **Body/Valve**: E, S, IC
- **Nozzle**: 18 - 20, 22 - 24, 26 - 28, 30 - 32
- **Thread Type ACME**

EAGLE™ 900 Performance Data - Metric

HIGH PERFORMANCE NOZZLES

	#44 BLUE			#48 YELLOW			#52 ORANGE			#56 GREEN			#60 BLACK			#64 RED		
Base Pressure bars	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h
4,1	19,2	1,35	4,85	22,3	1,82	6,56	22,9	2,01	7,25	24,7	2,39	8,60	—	—	—	—	—	—
4,5	19,8	1,42	5,11	22,3	1,89	6,81	23,5	2,10	7,57	25,0	2,48	8,94	26,2	2,63	9,47	27,4	2,88	10,35
5,0	20,7	1,50	5,40	22,4	2,01	7,22	24,2	2,22	8,00	25,5	2,60	9,40	26,8	2,78	10,00	27,9	3,04	10,94
5,5	21,6	1,55	5,59	22,8	2,14	7,72	24,7	2,34	8,41	25,9	2,74	9,87	27,7	2,92	10,52	28,3	3,21	11,56
6,0	21,6	1,64	5,90	23,3	2,19	7,88	24,7	2,45	8,81	26,3	2,87	10,34	27,7	3,06	11,03	28,8	3,35	12,06
6,5	21,9	1,71	6,16	23,5	2,24	8,06	24,9	2,55	9,19	26,8	3,00	10,80	27,7	3,19	11,50	29,2	3,49	12,57
6,9	22,3	1,76	6,35	23,5	2,64	8,22	25,3	2,64	9,49	27,1	3,10	11,15	27,7	3,29	11,86	29,6	3,60	12,97

Data reflect no pressure regulation.

EAGLE™ 950 Performance Data - Metric

HIGH PERFORMANCE NOZZLES

	#18 WHITE-C			#20 GRAY-C			#22 BLUE-C			#24 YELLOW-C			#26 ORANGE			#28 GREEN			#30 BLACK			#32 BROWN		
Base Pressure bars	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h
4,1	21,3	1,23	4,43	21,9	1,45	5,22	22,6	1,67	6,02	23,2	1,94	7,00	23,8	2,27	8,18	--	--	--	--	--	--	--	--	--
4,5	21,7	1,29	4,64	22,3	1,52	5,48	22,9	1,75	6,29	23,8	2,03	7,32	24,4	2,36	8,50	25,2	2,62	9,44	25,2	2,90	10,44	25,3	3,10	11,17
5,0	22,1	1,37	4,93	22,7	1,61	5,81	23,5	1,85	6,66	24,7	2,15	7,75	25,1	2,49	8,95	25,8	2,78	10,00	25,8	3,03	10,92	25,7	3,22	11,60
5,5	22,5	1,44	5,19	23,2	1,70	6,12	24,4	1,95	7,01	25,6	2,27	8,16	25,6	2,61	9,41	26,2	2,98	10,72	26,2	3,18	11,43	25,9	3,35	12,05
6,0	22,8	1,51	5,44	23,6	1,78	6,40	24,8	2,04	7,34	26,5	2,38	8,56	26,0	2,70	9,73	26,9	3,04	10,93	27,1	3,29	11,85	26,6	3,46	12,46
6,5	23,0	1,58	5,68	24,0	1,86	6,69	25,3	2,12	7,64	27,1	2,48	8,93	26,5	2,83	10,18	27,4	3,16	11,37	27,7	3,42	12,30	27,3	3,61	13,00
6,9	23,2	1,63	5,86	24,4	1,92	6,93	25,6	2,18	7,86	27,4	2,56	9,20	26,8	2,95	10,61	27,7	3,29	11,86	28,0	3,52	12,67	28,0	3,75	13,49

Data reflect no pressure regulation.

All data are generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.

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RAIN BIRD® 700/751 Series

Specifications

- **Radius:**
  - **Rain Bird® 700 Series:** 17.1 m to 24.1 m
  - **Rain Bird® 751 Series:** 10.7 m to 22.9 m
- **Flow rate:**
  - **700 Series:** 3.70 to 9.95 m^3/h
  - **751 Series:** 1.59 to 8.56 m^3/h
- **Arc:**
  - **700 Series:** Full-circle 360°
  - **751 Series:** Full-circle 360°; Adjustable 30° to 345°
- **Models:**
  Full-Circle:
  - **700E:** Electric
  - **700IC:** Integrated Control
  - **700S:** Combined use Stopamatic (SAM)
  - **700B:** Seal-A-Matic™ device
- **Part-Circle:**
  - **751E:** Electric
  - **751IC:** Integrated Control
  - **751S:** Combined use Stopamatic (SAM)
  - **751B:** Seal-A-Matic™ device
- **Maximum Inlet Pressure:**
  - **Models 700/751E and IC:** 10.3 bars
  - **Models 700/751S and B:** 6.9 bars
  - **Pressure Regulation Range:** 4.1 to 6.9 bars
  - **Factory Pressure Settings:** 700E/IC and 751E/IC : 4.8 bars
- **Dimensions:**
- **Body Height:**
  - **Models E, IC, S:** 30.5 cm
  - **Models B:** 24.5 cm
- **Pop-Up Height to Mid-Nozzle:**
  - **Models E, IC, S, B:** 6.6 cm
- **Top diameter:**
  - **Models E, IC, S:** 15.9 cm
  - **Models B:** 10.8 cm
- **Rotation Time:**
  - **700 Series:** 360° in ≤ 180 seconds; 150 seconds nominally
  - **751 Series:** 180° in ≤ 90 seconds; 75 seconds nominally
- **Inlet Threads:**
  - **Models E, IC, S:** 3.2 cm ACME Female Threaded
  - **Models B:** 2.5 cm ACME Female Threaded
- **Holdback:**
  - **Block:** 3.1 m of elevation
  - **SAM:** 4.6 m of elevation
- **Nozzle Trajectory:** 25°
- **Maximum Stream Height:** 5.2 m
- **Solenoid:** 24 VAC solenoid power requirement: 0.41 amp inrush current (9.8 VA); 60 cycle: 0.25 amp holding current (6.0 VA); 50 cycle: 0.32 amp holding current (7.7 VA)
- **Surge Resistance:** Up to 20KV standard on electric models
- **Top-Serviceable Rock Screen™ and Replaceable Valve Seat:** On models 700E, IC, S and 751E, IC, S

700 Series

How to Specify/Order:

700 - X - XX - ACME

- **Model**: 700
- **Body/Valve**: E, IC, S, B
- **Nozzle**: 28 - 32, 36 - 40, 44 - 48
- **Thread Type ACME**

751 Series

How to Specify/Order:

751 - X - XX - ACME

- **Model**: 751
- **Body/Valve**: E, IC, S, B
- **Nozzle**: 20 - 22, 28 - 32, 36 - 40, 44 - 48
- **Thread Type ACME**

700 SERIES PERFORMANCE DATA

		3,4 Bars			4,1 Bars			4,8 Bars			5,5 Bars			6,2 Bars			6,9 Bars		
	Base Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)
WIND TOLERANT NOZZLES	16 - GRAY	-	-	-	17,1	1,03	3,7	17,1	1,1	3,97	18,3	1,17	4,2	18,9	1,27	4,59	19,2	1,33	4,79
	18 - RED	-	-	-	17,7	1,2	4,32	18,6	1,32	4,75	19,8	1,41	5,06	19,8	1,46	5,27	19,8	1,53	5,5
	22 - BLACK	-	-	-	-	-	-	19,8	1,74	6,27	19,8	2,2	7,9	20,4	2,45	8,81	21,6	2,56	9,2
DUAL SPREADER NOZZLES	28 - WHITE	18	1,26	4,54	17,4	1,38	4,97	17,4	1,5	5,38	18,6	1,44	5,18	18,6	1,52	5,47	18,6	1,61	5,79
	32 - BLUE	18,6	1,38	4,97	19,2	1,44	5,18	19,8	1,55	5,56	19,8	1,73	6,22	20,4	1,83	6,59	20,4	1,87	6,72
	36 - YELLOW	19,8	1,46	5,27	19,8	1,61	5,79	19,8	1,73	6,25	20,4	1,86	6,7	19,8	1,97	7,09	20,4	2,08	7,47
	40 - ORANGE	19,8	1,61	5,79	20,4	1,75	6,31	21,6	1,88	6,77	21,6	2,01	7,25	22,3	2,14	7,7	22,3	2,25	8,09
	44 - GREEN	-	-	-	21,6	1,94	6,97	21	2,08	7,49	21,6	2,22	7,99	22,9	2,37	8,52	22,9	2,49	8,97
	48 - BLACK	-	-	-	-	-	-	22,3	2,33	8,4	23,5	2,49	8,95	24,1	2,64	9,49	23,5	2,76	9,95

Data reflect no pressure regulation.

751 SERIES PERFORMANCE DATA

		3,4 Bars			4,1 Bars			4,8 Bars			5,5 Bars			6,2 Bars			6,9 Bars		
	Base Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)	Radius (m)	Flow (l/s)	Flow (m^3/h)
WIND TOLERANT NOZZLES	16 - GRAY	-	-	-	18,3	0,99	3,57	18,9	1,05	3,79	18,9	1,12	4,04	19,5	1,19	4,27	20,1	1,29	4,63
	18 - RED	-	-	-	19,2	1,19	4,27	19,2	1,26	4,54	19,8	1,35	4,86	20,4	1,43	5,16	20,4	1,51	5,45
	22 - BLACK	-	-	-	-	-	-	19,8	1,74	6,27	19,8	2,26	8,13	20,4	2,37	8,54	21,6	2,59	9,33
DUAL SPREADER NOZZLES	20 - GRAY	10,7	0,44	1,59	10,7	0,48	1,73	11,3	0,51	1,84	11,9	0,54	1,95	-	-	-	-	-	-
	22 - RED	12,2	0,52	1,89	13,7	0,6	2,16	13,7	0,64	2,32	13,1	0,68	2,45	-	-	-	-	-	-
	28 - WHITE	16,8	0,96	3,45	17,4	1,06	3,82	18	1,14	4,11	18	1,22	4,38	18	1,29	4,66	17,4	1,36	4,88
	32 - BLUE	18	1,08	3,88	18,6	1,17	4,22	18,6	1,26	4,54	18,6	2,01	7,25	19,2	1,42	5,11	19,2	1,51	5,43
	36 - YELLOW	18,6	1,21	4,34	19,2	1,31	4,72	19,8	1,43	5,13	20,4	1,51	5,45	21	1,61	5,79	21	1,67	6,02
	40 - ORANGE	19,2	1,37	4,93	20,4	1,5	5,41	21	1,62	5,81	21	1,73	6,25	21,6	1,82	6,56	21,6	1,94	6,97
	44 - GREEN	-	-	-	19,8	1,66	5,97	21	1,79	6,43	21,6	1,92	6,9	21,6	2,03	7,29	22,3	2,15	7,74
	48 - BLACK	-	-	-	-	-	-	21	1,98	7,13	22,3	2,13	7,65	22,9	2,25	8,11	22,3	2,38	8,56

Data reflect no pressure regulation.

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EAGLE™ 351B Series

Specifications

- **Radius:** 5.5 m to 17.1 m
- **Arc:** 360° in full-circle mode, adjustable from 50° to 330° in part-circle mode
- **Flow Rate:** 0.11 to 0.98 l/s

Models:

- EAGLE™ 351B: SEAL-A-MATIC™ device
- **Maximum inlet pressure:** 6.9 bars
- **Recommended Operating Pressure:** 4.1 bars to 5.5 bars

Flow:

- **Full-Circle Mode:** 360° ≤ 180 seconds; 120 seconds nominally
- **Inlet Threads:** 1" (2.5 cm) ACME
- **Holdback:** 3.1 m of elevation
- **Nozzle Trajectory:** 17° and 25°
- **Maximum Stream Height:** 4.0 m

Dimensions:

- **Body Height:** 24.5 cm
- **Top Diameter:** 10.8 cm
- **Pop-Up Height to Mid-Nozzle:** 8.3 cm

How to Specify/Order:

351 - X - XX (X) - ACME

Model	Body Valve	Nozzle**					Thread Type ACME
351	B	Low Flow	18S	22S	High Flow	18M† 26M†	
			26S	30S		30M† 36M†	
			36S		Long Throw	40 44	
						48 54	

EAGLE 351B Performance Data – Metric

NOZZLES

	4,1 bar			4,8 bar			5,5 bar			6,2 bar		
Base Pressure bars	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h	Radius m	Flow l/s	Flow m³/h
18S White	5,5	0,11	0,41	6,1	0,12	0,43	6,1	0,13	0,45	6,7	0,14	0,50
22S Dark Gray	6,7	0,14	0,50	6,7	0,15	0,55	7,3	0,16	0,57	7,9	0,17	0,61
26S Dark Orange	7,3	0,16	0,60	7,3	0,18	0,64	7,9	0,20	0,70	7,9	0,20	0,73
30S Light Green	9,1	0,19	0,68	9,1	0,20	0,70	9,8	0,20	0,73	9,8	0,21	0,77
36S Brown	10,4	0,23	0,82	10,4	0,24	0,86	10,4	0,26	0,95	11,0	0,28	1,00
18M† Ivory	6,1	0,25	0,91	6,1	0,26	0,95	6,7	0,28	1,00	7,3	0,30	1,07
26M† Medium Orange	7,3	0,35	1,27	7,3	0,38	1,36	7,9	0,41	1,48	7,9	0,44	1,57
30M† Green	9,1	0,36	1,30	9,1	0,39	1,41	9,8	0,42	1,50	9,8	0,45	1,61
36M† Light Brown	10,4	0,45	1,61	10,4	0,49	1,77	10,4	0,53	1,91	11,0	0,56	2,02
40 Orange	12,2	0,13	0,48	12,2	0,15	0,52	12,8	0,15	0,55	12,8	0,16	0,57
44 Red	13,4	0,22	0,80	14,0	0,23	0,82	14,0	0,26	0,93	14,0	0,27	0,98
48 Blue	14,6	0,37	1,32	14,6	0,40	1,45	14,6	0,43	1,55	14,6	0,44	1,60
54 Beige	15,2*	0,78*	2,82*	16,5*	0,85*	3,07*	17,1*	0,92*	3,32*	17,1*	0,98*	3,52*

Data reflect no pressure regulation. For a block rotor, it is the pressure at the inlet to the rotor casing after the pressure has been regulated through a valve.

**For best results, recommended for use in triangular spacing only.*

All data are generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.

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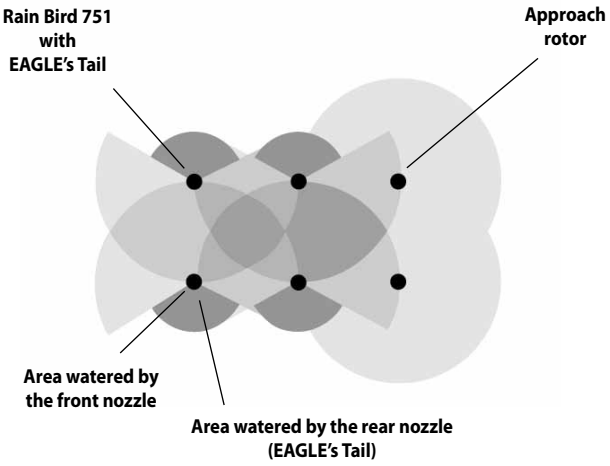
EAGLE'S TAIL

Typical installation :
Watering area behind the Rain Bird 751



Specifications

The EAGLE's Tail is designed to irrigate areas behind part-circle rotors installed on greens. They are also ideal for situations where the rotor is offset from the edge of a lake, stream, or slope. In certain instances, part-circle EAGLE rotors equipped with the EAGLE's Tail have replaced full-circle rotors on fairways, which allows the superintendent to minimize the amount of water required and not water native grasses in perimeter areas.

What's Included

- Nozzle Housing for 550, or 950, equipped with EAGLE's Tail nozzle
- 751 all needed is removing plug and insertingTail Nozzle
- Housing cover
- Retract seal (round ring at top of nozzle housing)
- 2 O-rings for the screws
- Instruction Card

How to Specify/Order:

Description	Part No.
750/751 Spreader Nozzle - Mid-range (Blue)	211562
750/751 Spreader Nozzle - Mid-range (Black)	211417
750/751 Spreader Nozzle - Mid-range (Black) w/diffuser	211452
RAIN BIRD 751 rotor with tail nozzle pre-installed	GRC101740T6
EAGLE 950E Rotor with tail nozzle installed	GRE502828T

Rain bird 751 Performance Data with Tail Nozzles

Main Nozzle Size 28					Main Nozzle Size 32					Main Nozzle Size 36				
Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]	Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]	Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]
blue	4.1	5.14	15.54	13.71	blue	4.1	5.58	17.98	13.10	blue	4.1	5.89	17.98	12.49
blue	4.8	5.54	15.54	13.71	blue	4.8	6.03	17.98	13.71	blue	4.8	6.36	18.59	11.88
blue	5.5	5.74	16.15	13.71	blue	5.5	6.42	18.59	13.71	blue	5.5	6.76	18.59	11.88
black	4.1	4.80	16.15	11.27	black	4.1	5.27	17.98	11.27	black	4.1	6.00	18.59	11.27
black	4.8	5.25	16.15	11.88	black	4.8	5.63	17.37	11.27	black	4.8	6.31	18.59	10.66
black	5.5	5.54	15.54	11.88	black	5.5	6.05	17.98	11.88	black	5.5	6.71	18.59	11.27
black w/diffuser	4.1	4.36	16.76	9.44	black w/diffuser	4.1	4.76	17.37	10.05	black w/diffuser	4.1	5.56	19.81	10.66
black w/diffuser	4.8	6.65	17.37	9.44	black w/diffuser	4.8	5.14	17.37	10.05	black w/diffuser	4.8	5.83	19.81	10.66
black w/diffuser	5.5	4.96	16.76	9.44	black w/diffuser	5.5	5.47	17.37	10.05	black w/diffuser	5.5	6.16	19.81	10.66

Rain bird 751 Performance Data with Tail Nozzles

Main Nozzle Size 40					Main Nozzle Size 44					Main Nozzle Size 48				
Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]	Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]	Spreader nozzle Color	Pressure [bar]	Flow [m³]	Main Nozzle Range [m]	Spreader Range [m]
blue	4.1	6.74	19.20	12.49	blue	4.1	7.33	19.81	11.88	blue	4.8	8.51	21.64	12.49
blue	4.8	7.29	19.81	12.49	blue	4.8	7.95	20.42	11.88	blue	5.5	8.97	22.86	11.88
blue	5.5	7.78	20.42	12.49	blue	5.5	8.44	21.03	11.88	blue	6.2	9.60	22.86	11.88
black	4.1	6.58	18.59	11.27	black	4.1	7.22	19.81	10.66	black	4.8	8.51	22.86	11.27
black	4.8	7.09	19.20	11.27	black	4.8	7.78	20.42	10.66	black	5.5	9.11	23.47	10.66
black	5.5	7.58	19.81	11.27	black	5.5	8.29	21.64	10.05	black	6.2	9.57	24.07	11.27
black w/diffuser	4.1	6.18	19.20	9.44	black w/diffuser	4.1	6.60	19.81	10.05	black w/diffuser	4.8	8.00	22.25	9.44
black w/diffuser	4.8	6.69	19.81	9.44	black w/diffuser	4.8	7.09	21.03	8.83	black w/diffuser	5.5	8.46	22.25	9.44
black w/diffuser	5.5	7.11	20.42	9.44	black w/diffuser	5.5	7.58	21.64	9.44	black w/diffuser	6.2	8.89	23.47	9.44

NOTE: 1/ Recommended for use on sites experiencing continuous high wind conditions of 6.5 km/h or more. 2/ For best results, it is recommended to use rotors in triangular spacing. 3/ The range and flow data is from zero-wind condition only. Users should apply their experience and judgement to reduce the range of throw and space the rotors suitably according to the local wind conditions.

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SWING JOINTS

Standard Model

ACME Outlet

BSP to ACME Adapters

Specifications

Diameters: 1" (2,5 cm), 1,25" (3,2 cm) and 1,5" (3,8 cm)

Lengths: 12" (30,5 cm) and 18" (45,7 cm)

Inlet Type: BSP

Outlet Thread Type: ACME

Pressure Rating: 21,7 bars to 22,8˚C

Outlet Configuration: Single-top or triple-top

Benefits of ACME Threads

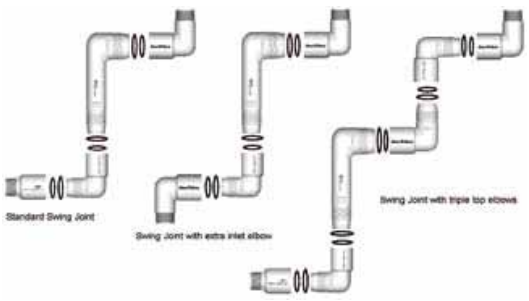
– ACME threads do not require Teflon tape.

– Independent seal - The threads seal with an o-ring that engages after approximately two complete turns of the rotor. Another four or more complete turns can then be added to allow the installer to level and align the rotor without fear of causing a leak at the threads.

– The wiping action of the o-ring seal makes ACME threads more debris resistant.

– ACME threads have less risk of frost heave damage because the threads allow for movement in freezing conditions.

– The ACME thread is designed to leak before disengaging if it is accidentally unscrewed under pressure. This safety feature warns the operator to turn off the water pressure before continuing.



Product Features

- **Superior Flow Characteristics -** An innovative swept elbow design* reduces pressure loss by 50 percent over other swing joints.
- **Excellent Structural Integrity** - Reduces the costs associated with fatigue-related failures.
- **Double O-ring Protection** - Provides a better seal to ensure that joints are kept clean and can be repositioned easily.
- **Color-coding and Distinct Size Markings** - Reduce costs by eliminating errors and improving installation efficiency with quick size identification at the job site.
- **Oversized Threaded Inlets** - Make hand-tightening and blind installations (underwater) easier. This also reduces the risk of potential damage caused by over-tightening with a wrench.
- **An available triple-top outlet configuration allows for easier adjustments when turf height changes or rotors settle** - MIt also provides greater flexibility in setting the rotor to the grade.

*Patent pending

How to Specify/Order:

SJ-(X)X-XXX-XX-(X)

Length

12 = 12" (30,5 cm)
18 = 18" (45,7 cm)

Diameter

100 = 1" (White)
125 = 1¼" (Light Grey)
150 = 1½" (Dark Grey)

Option

E=Extra inlet elbow
T=Triple-Top elbow

Inlet/Outlet Styles

Inlet	***Outlet***
2	*2 - 3*

Example: 22 = BSP inlet, BSP outlet

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Single-top or triple-top outlets with ACME thread.

Optional enlarging outlets on 1" and 1 ¼" diameter models allow easy connections to larger rotors (no additional adapters required).

Available in 30 cm, (12") and 45 cm (18") lengths and 1", 1 ¼" and 1 ½" diameters with color-coding for quick size identification.

Thicker wall construction improves structural integrity.

Size and thread types are marked in large lettering on both inlets and outlets for quick identification.

Modified ACME outlet design improves safety by providing visual identification if the system is still under pressure during rotor removal.

Double O-ring protection at each joint ensures joint threads are kept clean and can be repositioned more easily.

Swept corners and an enlarged elbow turn radius enable superior water flow, reducing pressure loss by more than 50% compared to the competition. Rugged construction eliminates fatigue-related failures, while the money-saving optional universal lay arm and enlarging outlets easily meet the flow requirements of larger rotor heads.

Oversized threaded inlets make hand tightening and blind installations (underwater) easier.

BSP inlet.

RENOVATIONS TIPS

- **Install a new ACME Rotor on an existing BSP/BSP swing joint:**
  - – Change the outlet elbow and replace by an ACME outlet elbow
  - – Add a BSP to ACME adapters – Just screw it right on top of your BSP swing joint and screw the ACME case to the adapter. The adapter only adds about 5 cm to the installed height of the rotor and is rated to the same operating pressures as the Swing Joints.

- **Install a BSP rotor or quick coupling valve on a swing joint:**
  - – 1" BSP/BSP swing joints available
  - – Change the outlet elbow and replace by a BSP outlet elbow

Accesories for retrofit

– ACME outlet elbows: 1", 1"¼, 1"½
– BSP outlet elbows: 1", 1"¼, 1"½
– BSP female to ACME male adapters: 1"BSP-1"ACME, 1"¼ BSP-1"¼ ACME, 1"½ BSP-1"½ ACME

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Rain Bird/Eagle gear drive rotors outperform older technology

The evolution of impact to gear drive and the many enhancements made as a result of feedback from end users make the Rain Bird/Eagle Series the best gear drive on the market.

Here are just some of the Rain Bird/ Eagle Series unique features:

– The Rain Bird/Eagle's closed case design and unique flushing action ensure positive retraction when covered by top-dressing or bunker sand. No extra cleaning or maintenance, or problems stored for the future.
– Gear drive rotors have built-in filtration to allow filtered water – including recycled water - into the motor to lubricate the gears. The water then flows around the outside of the gear box motor to the nozzle and out. Water lubrication is environmentally friendly compared with oil lubrication.
– Patented Top-Serviceable Rock Screen and Replaceable Valve Seat allow for debris removal during installation or due to build-up over time.
– Rain Bird 700/751 dual spreader nozzle designed to provide a similar distribution profile to that of an impact- wind or otherwise.
– Rain Bird 700/751 Wind Tolerant nozzle with 12°low angle trajectory and innovative flow channel (to provide a larger droplet size) is designed to outperform anything else in extreme wind conditions.

Rain Bird® 700/751 internals

Rotor replacement

Fits into 700/751 E Series Cases - Delivered with nozzle 40 pre-installed.

Specifications

- **Models:**
  - **RB 700:** Full-circle, 360°
  - **RB 751:** Full circle 360°, adjustable 30° to 345°
- **Radius:**
  - **RB 700:** 17.1 m to 24.1 m
  - **RB 751:** 10.7 m to 22.9 m
- **Maximum Pressure:** 6.9 bars
- **Pop-Up Height to Nozzle:** 8.3 cm

Consult Eagle 700/751 performances charts.

How to Specify/Order:

Description

Model	***P/N***
700E internal assembly	214700-XX
751E internal assembly	214751-XX

Eagle Nest 700/751

Rotor Adaptor

Retrofit: Fits inside a 47/51 Impact Series rotor body for RB 700/751 performance

Specifications

- **Models:**
  - **RB 700:** Full-circle, 360°
  - **RB 751:** Full circle 360°, adjustable 30° to 345°
- **Radius:**
  - **RB 700:** 17.1 m to 24.1 m
  - **RB 751:** 10.7 m to 22.9 m
- **Arc:**
  - **RB 700:** Full-circle, 360°
  - **RB 751:** Full circle 360°, adjustable 30° to 345°
- **Maximum pressure:** 6.9 bars
- **Pop-Up Height to Nozzle:** 8.3 cm
- **Rotation Time:**
  - **RB 700:** 360° in 180 seconds; 150 seconds nominally
  - **RB 751:** 180° in 90 seconds; 75 seconds nominally
- **Maximum Stream Height:** 5,2 m

How to Specify/Order:

RB XXX - XX

Model	***Nozzle***
700 751	20 Grey - 22 Red - 28 White, 32 Blue, 36 Yellow, 40 Orange, 44 Green, 48 Black

Golf Serie rotor tools

Models	Specifications
VT-700	Valve insertion tool for EAGLE™ Series 500/550 and Series 700/751.
VT-DR	Valve insertion tool for EAGLE™ 900/950 and 1100/1150 rotors.
IS-TSRS	Installation socket for top-serviceable rock screen Eagle™ valve-in-head.
SRP	Snap ring pliers for EAGLE™ Series 900/950 and 1100/1150.
SR-700	Snap ring pliers for EAGLE™ Series 500/550 and Series 700/750/751.

Models	Specifications
DR-SVK-7	7" (18 cm) Selector Valve Key ; set operating mode off, auto, manual EAGLE™ Series 500E/550E, Series 700E/750E/751E, 900E/950E and 1100E/1150E rotors.
EGL-SVK Multi-function tool used to : • Scrape away grit from the valve selector assembly on EAGLE™ 500E/550E, Series 700E/750E/751E, 900E/950E and 1100E/1150E rotors.	• Set the valve selector to OFF, manual or automatic operation on EAGLE™ Series 500E/550E, Series 700E/750E/751E, 900E/950E and 1100E/1150E rotors. • Remove the solenoid plunger tube assembly on on EAGLE™ Series 500E/550E, Series 700E/750E/751E, 900E/950E and 1100E/1150E rotors and electric valves PE/PES Series.
UHA	Universal Hose Adapter ; After removing EAGLE™ Series 500/550, Series 700/750/751, 900/950 and 1100/1150 internal assembly, the UHA provides a source for supplemental hand watering operation with a swivel hose ell and hose.

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Now more than ever, performance matters

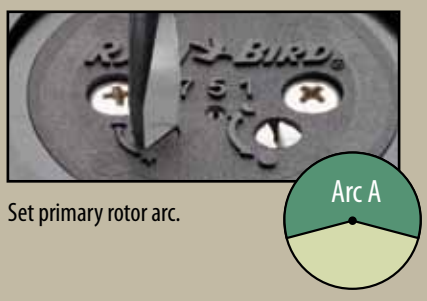
One twist and you'll see how we've once again brought The Intelligent Use of Water™ to life. Thanks to Rapid-Adjust technology featuring MemoryArc,™ Rain Bird® 751 Golf Rotors enable you to water your turf more precisely—and efficiently.

Make the most of every rotor with new Rapid-Adjust Technology featuring MemoryArc.™ Available on new Rain Bird® 751 Golf Rotors, this innovative feature allows you to easily adjust watering on greens, fairways or roughs for unmatched versatility and precise control. Offering proven Rain Bird durability and distribution uniformity, these cost-efficient rotors are also backward-compatible with existing Rain Bird rotor cases. Doing more when it matters most. That's The Intelligent Use of Water.™

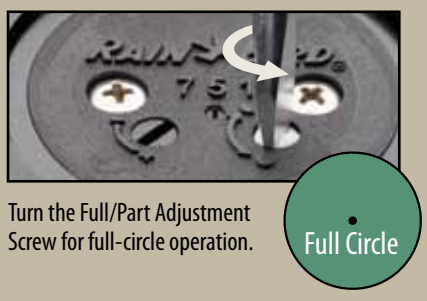
Turn-of-a-Screw Flexibility

Your course's watering needs seem to change by the day. Now your watering arc can change with them. Unlike competitive products, Rain Bird® 751 Golf Rotors offer easy, top-adjustable rotation settings that retain the memory of their part-circle arc setting when shifting between full- and part-circle operation. This unique feature is designed to offer quick, dry arc adjustments not just during grow-in, but for the life of the rotor. So whether you need to increase the arc during grow-in or conserve water in response to water restrictions, you can do it all with just a simple twist of your wrist.

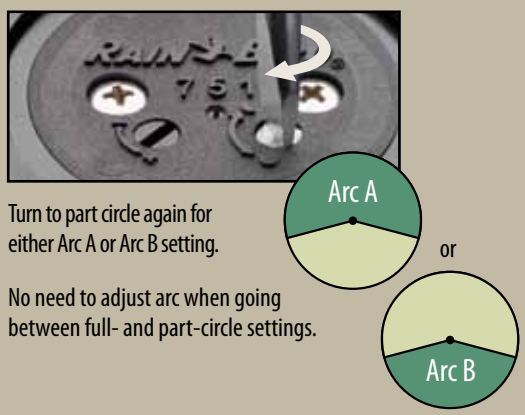
Introducing Rapid-Adjust Technology featuring MemoryArc™



Set primary rotor arc.



Turn the Full/Part Adjustment Screw for full-circle operation.



Turn to part circle again for either Arc A or Arc B setting.

No need to adjust arc when going between full- and part-circle settings.

More versatility. Less wire. *Upgrade to the ultimate in flexibility and simplicity—order your Rain Bird® 700 and 751 Golf Rotors with optional Rain Bird® IC™ System functionality. Learn how ICS helps you use up to 90% less wire at* ***www.rainbird.eu***

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PGA SERIES: 100-PGA/ 150-PGA and 200-PGA
Electric Plastic Remote Control Valves

Features

- **Combination globe/angle configuration**
- **Heavy-duty PVC construction**
- Manual internal bleed with 1/4-turn of the solenoid
- **Solenoid with convenient handle**
- **Slow closing to prevent water hammer and subsequent system damage**
- Filtered pilot-flow
- One-piece solenoid with captured plunger
- Encapsulated solenoid
- **Flow control**

Specifications

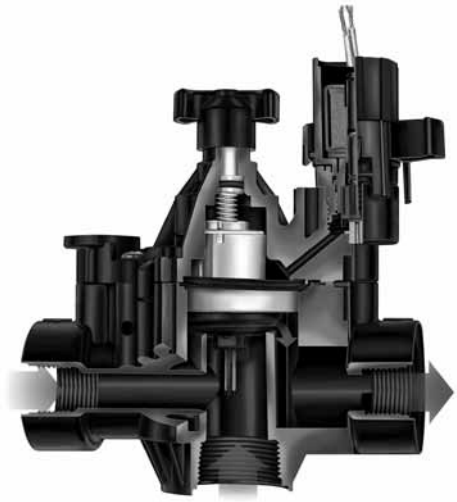
Flow: 0,5 to 34,0 m³/h
Pressure: 1,0 to 10,4 bar (23° C)
Temperature: up to 43°C

ELECTRICAL SPECIFICATIONS
Solenoid: 24 VAC - 50 Hz
Inrush current: 0,41 A (9,9 VA)
Holding current: 0,23 A (5,5 VA)

DIMENSIONS Height x Length x Width
100-PGA : 18,4 cm x 14,0 cm x 8,3 cm
150-PGA : 20,3 cm x 17,2 cm x 8,9 cm
200-PGA : 25,4 cm x 19,7 cm x 12,7 cm

TEMPERATURE RATING

Water temperature	Continuous pressure
23°C	10,4 bars
27°C	9,1 bars
32°C	7,7 bars
38°C	6,4 bars
43°C	5,2 bars



How to Specify/Order :

XXX - PGA - IC

Size ***Optional IC module***

100-PGA: 1" (26/34) BSP female threaded inlet and outlet

150-PGA: 1,5" (40/49) BSP female threaded inlet and outlet

200-PGA: 2" (50/60) BSP female threaded inlet and outlet

Valve Pressure loss (bars)

100-PGA		
m³/h	Globe	Angle
1,2	0,38	0,38
3	0,41	0,41
6	0,43	0,43
9	0,48	0,48

150-PGA		
m³/h	Globe	Angle
6	0,10	0,07
9	0,22	0,14
12	0,38	0,23
15	0,61	0,36
18	0,86	0,51
21	1,16	0,70

200-PGA		
m³/h	Globe	Angle
9	0,08	0,07
12	0,12	0,07
15	0,17	0,10
18	0,24	0,13
21	0,33	0,18
24	0,43	0,23
27	0,54	0,30
30	0,66	0,36
34	0,83	0,45

Pressure loss values are with flow control fully open.

PEB AND PESB SERIES
Electric Remote Control Plastic Valves With Optional scrubber

Features

- Body constructed of durable glass- filled nylon for long life and reliable performance. Stainless steel studs molded into the body resist thread damage.
- One-piece solenoid with captured plunger and spring for easy servicing. Prevents loss of parts during field service.
- Flow control handle adjusts water flow as needed.
- Manual internal bleed with 1/4-turn of the solenoid operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning on the valve at the controller.
- Manual external bleed permits flushing debris from the system. Recommended for system start up and after repairs.
- Globe configuration.
- Wide operating pressure range. Low flow operating capability for a wide range of applications.
- PESB model has nylon scrubber to scrape its stainless steel screen clean each time the valve opens and closes.

Specifications

Flow: 0,06-45 m^3/h
Pressure: 1,4-13,8 bars
Temperature: (66°C) maximum

ELECTRICAL SPECIFICATIONS
Solenoid: 24 VAC - 50 Hz
Inrush current: 0,41 A (9,9 VA)
Holding current: 0,23 A (5,5 VA)

DIMENSIONS Height x Length x Width
100-PEB/PESB: 16,5 cm x 10,2 cm x 10,2 cm
150-PEB/PESB: 20,3 cm x 15,2 cm x 15,2 cm
200-PEB/PESB: 20,3 cm x 15,2 cm x 15,2 cm

Valve Pressure loss (bars)			
Flow m^3/h	100 PEB/ PESB	150 PEB/ PESB	200 PEB/ PESB
1,2	0,12	—	—
3	0,15	—	—
6	0,32	0,26	—
9	0,68	0,24	—
12	—	0,26	—
15	—	0,33	—
18	—	0,42	0,32
21	—	0,57	0,34
24	—	0,74	0,41
27	—	0,92	0,51
30	—	1,14	0,64
33	—	1,38	0,77
36	—	—	0,90
39	—	—	1,04
42	—	—	1,18
45	—	—	1,34

1) Rain Bird recommends flow rates in the supply line not to exceed 1,5 m/s in order to reduce the effects of water hammer.
2) For flows below 1 m^3/h; 0,3 l/s Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.
3) For flows below 2 m^3/h; 0,6 l/s Rain Bird recommends that the flow control stem be turned down two full turns from the fully open position.

How to Specify/Order :

XXX - PEXB - IC

Optional IC module

Size
100: 1" female (26/34) BSP
150: 1,5" female (40/49) BSP
200: 2" female (50/60) BSP

Model
PEB - PESB

BPE AND BPES SERIES

3" Electric Remote Control Valves (hybrid brass + plastic construction)

Features

- Globe / angle configuration
- Brass body and glass – filled nylon bonnet
- One – piece solenoid design with captured plunger
- Manual internal bleed with 1/4 – turn of the solenoid
- Flow control handle on the bonnet
- BPES model has nylon scrubber to scrape its stainless steel screen clean each time the valve opens and closes

Specifications

Flow: 14 to 68 m^3/h
Pressure: 1,4-13,8 bars
Temperature: up to 43°C

ELECTRICAL SPECIFICATIONS
Solenoid: 24 VAC 50 Hz
Inrush current : 0,41 A (9,9 VA)
Holding current : 0,23 A (5,5 VA)

DIMENSIONS Height x Length x Width 300-BPE/BPES:
(3") BSP female threaded inlet/outlet : 34,61 cm x 20,32 cm x 17,78 cm

How to Specify/Order:

XXX - BPEX - IC

Optional IC module

Size
300: 3" BSP female

Model
BPE- BPES

Valve pressure loss (bars)		
Flow m^3/h	Globe	Angle
13,6	0,46	0,47
24	0,19	0,21
36	0,14	0,14
48	0,21	0,19
60	0,29	0,26
68	0,34	0,31
Pressure loss values are with flow control fully open		

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PRS -DIAL
Pressure Regulating Module

Features

- Maintains constant outlet pressure regardless of incoming pressure fluctuation.
- Use with Rain Bird PGA, PEB, PESB, BPE and BPES valves.
- Regulates from 1,0 to 7,0 bars.
- Ergonomic design with snap tight cover.
- Fine tune adjustment at 0,1 bar increments.
- Dial portion will retrofit existing PRS-B units.
- Pressure surge protection.

Specifications

Pressure: up to 13,8 bars.
Regulating range: 1,0 to 7,0 bars.
Accuracy: ± 0,2 bars.
Proper operation requires inlet pressure to be a minimum of 1 bar higher than desired outlet pressure.

Quick Coupling Valves

How to Specify/Order :

XX - XXXX

Model	***Cover***
3	*RC*
5	*LRC*
7	*-*

Specifications

Models:
3RC: 0,75" (20/27)
Rubber cover, one-piece body
5LRC: 1" (26/34)
Locking rubber cover, one-piece body
7: 1,50" (40/49) metal cover, one-piece body

Flow:
Models: 3RC, 5LRC, 7
2,28-28,39 m³/h

Pressure:
0,4-8,6 bars

Height:
3RC: 10,8 cm
5LRC: 14,0 cm
7: 14,6 cm

Valve pressure loss (bars)				
Flow m³/h	Flow l/s	3RC	5LRC	7
3	0,83	0,25	—	—
4	1,11	0,42	—	—
5	1,39	—	—	—
6	1,67	—	—	—
7	1,94	—	0,14	—
8	2,22	—	0,19	—
9	2,50	—	0,25	—
10	2,78	—	0,33	—
12	3,33	—	0,50	0,13
14	3,89	—	0,72	0,18
16	4,44	—	0,97	0,25
22	6,11	—	—	0,72
28	7,78	—	—	0,97

Quick Coupling Valve Keys

Valve Keys					
Top Pipe Threads					
Valve	Key	Male		Female	
3RC	33DK	0,75"	19 mm	0,50"	13 mm
5LRC	55K-1	1"	25 mm	—	—
7	7K	1,50"	38 mm	1,25"	—

Swivel Hose Elbow

Specifications

- **Models:**
  SH-0, SH-2
- **Female threaded inlet:**
  SH-0 3/4"
  SH-2 1"
- **Male threaded outlet:**
  SH-0 3/4"
  SH-2 1"

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VB SERIES VALVE BOXES

Valve Boxes provide superior box strength for better valve protection.

- Wide flange with corrugated structure provides superior box strength for better valve protection.
- Unique shovel access slot provides superior accessibility for service.
- Made of 100% recycled materials (black boxes). HDPE.
- Unique pipe hole knockouts provide faster and easier installation.

VB-STD

VB-JMB

Features

These features apply to the Standard, Jumbo, Super Jumbo, Maxi Jumbo, and 10" Round Valve Boxes

- Unique bolt hole knock-out design in lid keeps hazardous insect pests out of the box
- Shovel access on body allows for easy lid removal
- Knock-out retainers securely hold removed knock-outs above the pipe, keeping dirt out during backfill
- Beveled lid edges help prevent damages to lids from lawn equipment
- Interlocking bottoms allow boxes to mate securely together bottom-to-bottom for deep installations
- Lid marking area provides dedicated location for valve identification

VB-SPR

VB-MAX

Dimensions and Additional Features by Model

VB-10RND

VB-7RND

7" ROUND SERIES (VB-7RND) 7" Round Units (include body and lid)

Dimensions:

- 18 cm Top D X 22,9 cm H X 25,02 cm
- Bottom D
- Two pre-molded side opening accommodate up to 40 mm diameter pipe
- VB-7RND: Black body and green lid

10" ROUND SERIES (VB-10RND) 10" Round Units (include body and lid)

Dimensions:

- 27,0 cm Top D X 25,4 cm H X 35,0 cm Bottom D
- Four equally spaced knock-outs accommodate up to 40 diameter pipe (extension does not have knock-outs)
- VB-10RND-H: Black body and green lid with locking hex bolt

STANDARD RECTANGULAR SERIES (VB-STD) Standard Units (include body and lid)

Dimensions:

- 59,0 cm (L) X 49,0 cm (P) X 30,7 cm (H)
- Two large center knock-outs accommodate up to 75 diameter pipe and eleven knockouts accommodate up to 40 diameter pipe
- VB-STD-H: Black body and green lid with locking hex bolt

Standard 6" extension (body only)

Dimensions:

- 50,8 cm L x 37,5 cm W x 17,1 cm H
- VB-STD-6EXT-B: 6" standard extension black body only

JUMBO RECTANGULAR SERIES (VB-JMB) Jumbo Units (include body and lid)

Dimensions:

- 70,1 cm (L) x 53,3 cm (P) x 30,7 cm (H)
- Two large center knock-outs accommodate up to 75 diameter pipe (Extension does not have knock-outs)
- VB-JMB-H: Black body and green lid with locking hex bolt

Jumbo 6" extension (body only)

Dimensions:

- 62,0 cm L X 45,5 cm W X 17,1 cm H
- VB-JMB-6EXT-B : 6" jumbo extension black body only

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VB SERIES VALVE BOXES

Valve Boxes provide superior box strength for better valve protection.

SUPER JUMBO RECTANGULAR SERIES (VB-SPR) Super Jumbo Units (include body and lid)

Dimensions :

- 84,1 cm L X 60,6 cm W X 45,7 cm H
- Fourteen knock-outs accommodate up to 75 diameter pipe
- Includes two stainless steel bolts and clips to securely fasten the lid to the body
- VB-SPR-H: Black body and green lid with 2 locking hex bolts

MAXI JUMBO RECTANGULAR SERIES (VB-MAX) Maxi Jumbo Units (include body and lid)

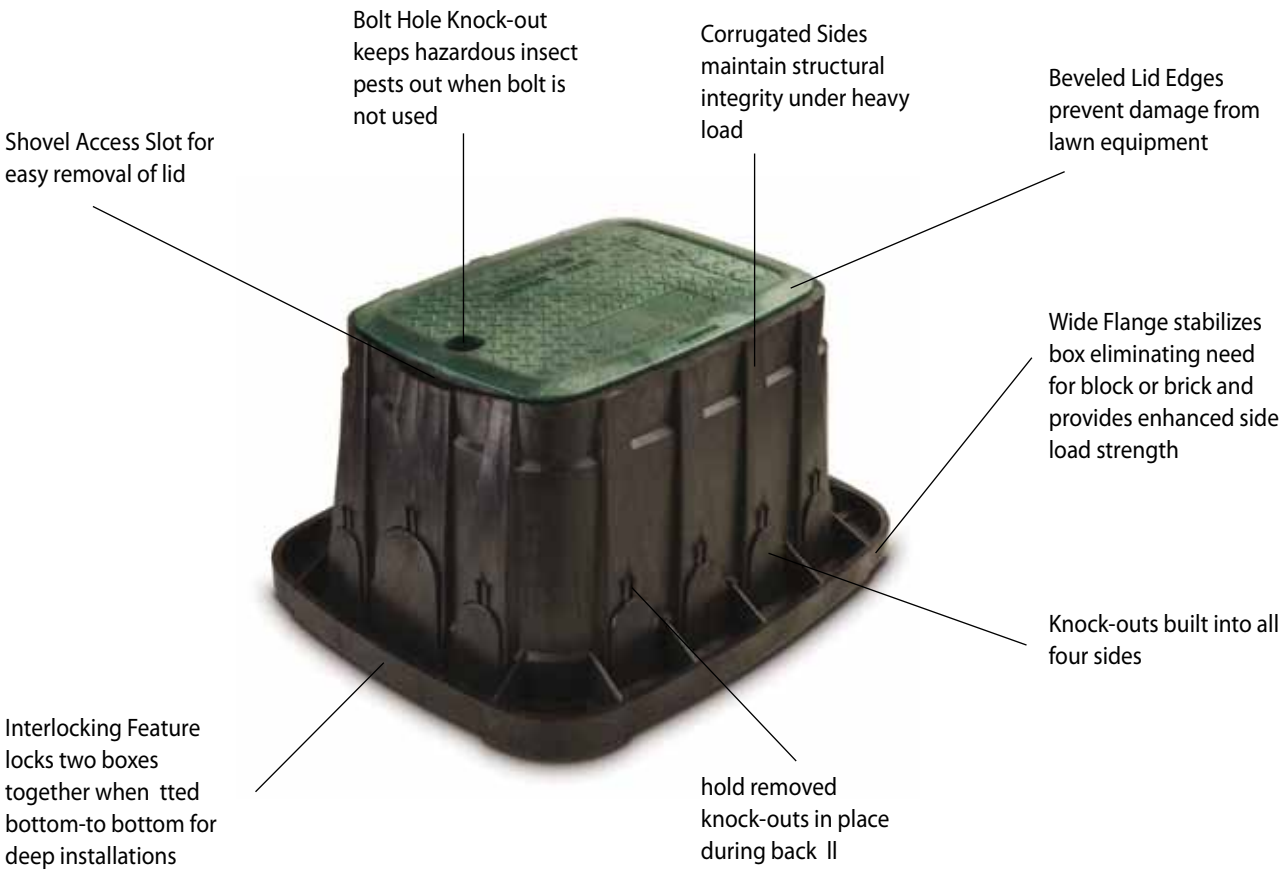
Dimensions :

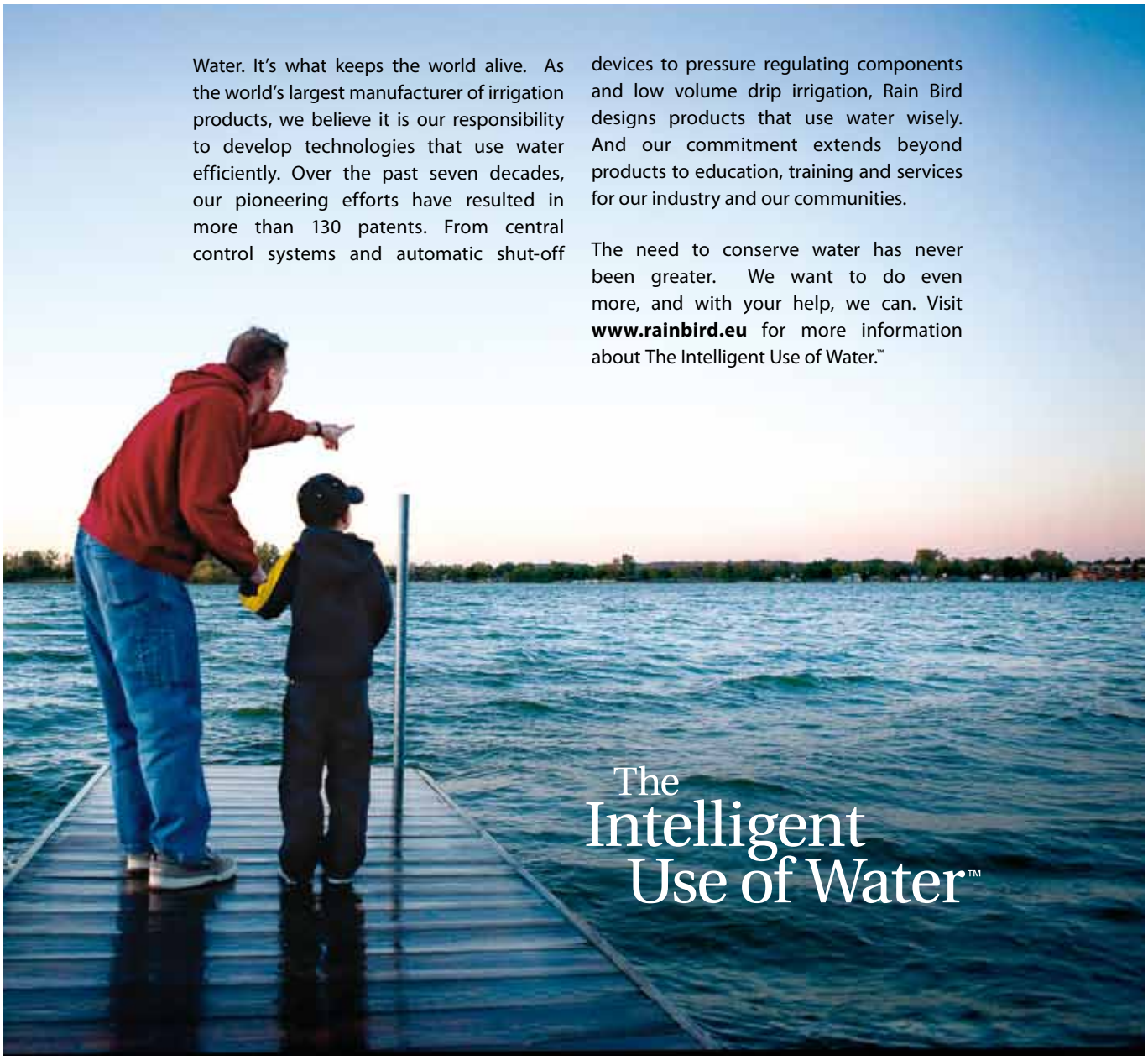
- 102,5 cm L X 68,9 cm W X 45,7 cm H
- Eighteen knock-outs accommodate up to 75 diameter pipe
- Includes two stainless steel bolts and clips to securely fasten the lid to the body
- VB-MAX-H: Black body and green lid with 2 locking hex bolts

LOCKING SYSTEMS (ANTI VANDAL)

- VB-LOCK-P: Penta head (0,9 X 5,7 cm) bolt, washer, and clip

Interlocking Bottoms for Deep Installations


Shovel Access Slot for easy removal of lid
Bolt Hole Knock-out keeps hazardous insect pests out when bolt is not used
Corrugated Sides maintain structural integrity under heavy load
Beveled Lid Edges prevent damage from lawn equipment
Wide Flange stabilizes box eliminating need for block or brick and provides enhanced side load strength
Knock-outs built into all four sides
Interlocking Feature locks two boxes together when tted bottom-to bottom for deep installations
hold removed knock-outs in place during back ll



Water. It's what keeps the world alive. As the world's largest manufacturer of irrigation products, we believe it is our responsibility to develop technologies that use water efficiently. Over the past seven decades, our pioneering efforts have resulted in more than 130 patents. From central control systems and automatic shut-off devices to pressure regulating components and low volume drip irrigation, Rain Bird designs products that use water wisely. And our commitment extends beyond products to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit **www.rainbird.eu** for more information about The Intelligent Use of Water.™

RAIN BIRD®

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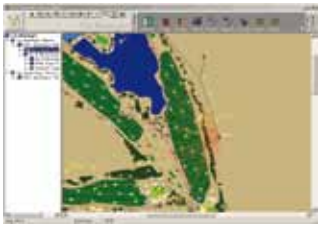
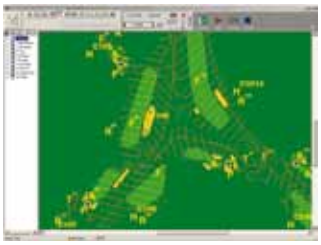
Rain Bird® Offers These Central Control Systems:



Cirrus FloManager™

Cirrus™

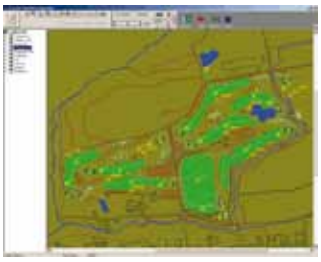
Cirrus™ central control system incorporates Computer-Aided Design (CAD) drawings generated by GPS technology and CAD, which allows you to see your course like no other central control system can. With state-of-the-art ET-based scheduling, customized course graphics and multiple mapping options, Cirrus makes controlling your irrigation system fast and easy.



Nimbus II Course Monitor

Nimbus™ II

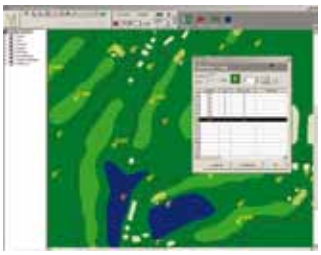
For a superior combination of ET-based scheduling, advanced flow management and Windowsbased simplicity, Nimbus™ II is an excellent choice to efficiently control all irrigation applications on up to three individual courses with a maximum of 36 holes.



Stratus II Course Monitor

Stratus™ II

For easy-to-use, time- or ET-based scheduling there's really only one choice — Stratus™ II — the one irrigation central control system that combines the point-and-click simplicity of Windows® with intuitive Rain Bird features to control up to as many as 27 holes.



Stratus LT Map

Stratus™ LT

With Stratus™ LT you can almost immediately begin to manage all the irrigation applications on one 18-hole course — from the greens to the roughs — without having to become a computer expert or spend extensive time learning to operate the system. Stratus LT now supports ET-based scheduling with WS-PRO LT and a weather software module.

GO

GO™

GO Software is a newly created level of central control software. It only supports operation of the IC Rotor and Valve-based system. The GO™ Central software controls irrigation activities through spreadsheets analysis for up to 18 holes.

All too often, superintendents or greens committees purchase a central control system that far exceeds the irrigation management requirements for their golf course.

Before deciding which central control system to purchase, think about the level of irrigation control you believe is necessary to maintain course appearance and playability, while reducing water, labor and energy costs. Keep in mind, too, that all Rain Bird Central Controls are designed to be backward compatible so as the irrigation needs of your course change over time it is affordably easy to continually upgrade with the most advanced technology.

Refer to the chart on the right to compare the features and irrigation management tools provided with each of these systems.

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Golf Central Control Overview

			Go	Stratus LT	Stratus II	Nimbus II	Cirrus
	Real-Time Decision Making		Yes	Yes	Yes	Yes	Yes
	Works with FREEDOM™ System		Optional	Std	Std	Std	Std
	Maximum # of Pump Stations		2	2	6	6	6
	Number of Weather Stations - Max w/Multiple WS Module		No	1	1	5	5
	Hybrid Module		No	No	Optional	Optional	Yes
Satellite System	**Works with PAR+ES & PAR+ES-Dec**		No	**Yes**	Yes	**Yes**	Yes
	Maximum # of 2-Wire Satellites (24 stations each)		N/A	**28**	56	**336***	448*
	Maximum number of 2-wire satellite stations		N/A	**672**	4032*	**8064***	8064*
IC System	Works with IC Modules (on valve or Rotors)		Yes	Yes	Yes	Yes	Yes
	Pre-Configuration Software option	# of IC Modules	750	750	1 500	4 500	9 000
		# of wire path	1	1	2	6 preconfigured	12 preconfigured
		# of IC Interface	1	1	1	2	3
	Maximum Capacity	# of IC Modules	750	750	3 000***	9 000***	24 000
		# of wire path	1	1	4***	12	32
		# of IC Interface	1	1	2 ICI with hybrid keycode	3	8
	Maximum number of Active IC Module		No electrical limit	No electrical limit	No electrical limit	No electrical limit	No electrical limit
Decoder System	Works with RB Decoders		No	Yes	Yes	Yes	Yes
	Number of Decoders - Standard		N/A	200	500	500	500
	Number of Solenoids - Standard		N/A	400	1 000	1 000	1 000
	Maximum # of Solenoids w/Hybrid Module		N/A	300	700**	1 500**	2 000**
	Maximum # of Decoders w/Hybrid Module		N/A	600	1 500**	3 000**	4 000**
	Maximum # of Active Solenoids		N/A	15/SDI	30/MDI	40/MDI	40/MDI
Programming	QuickIRR/SimpleIRR		Yes	Yes	Yes	Yes	Yes
	Nbr of Courses /Sites – Max		1 course	1 course	2 courses	3 courses	3 courses
	Nbr of Holes – Max		18 holes	18 holes	27 holes	36 holes	54 holes
	Irrigation Programs - Active simultaneously		10	10	10 per course	50 per course	50 per course
	Total # of Irrigation Programs		250	250	250	Unlimited	Unlimited
Software Features	ET-Based Scheduling		No	Yes	Yes	Yes	Yes
	ET Management (fully automatic)		No	Optional	Optional	Yes	Yes
	Flo-Manager®		Light version	Yes	Yes	Yes	Yes
	Flo-Watch®		No	Yes	Yes	Yes	Yes
	Rain Watch™		Yes	Yes	Yes	Yes	Yes
	MI Serie Mobile Control		No	Optional	Optional	Optional	Optional
	Minimum ET™		No	Optional	Yes	Yes	Yes
	ET Spreadsheet Analysis		No	Yes	Yes	Yes	Yes
	Projected Flow (Dry Run)		No	Yes	Yes	Yes	Yes
	Graphics – Course View		No	Yes	Yes	Yes	Yes
	Import GPS, CAD, or Aerial Photo		No	Yes	Yes	Yes	Yes
	Precipitation Data		No	Yes	Yes	Yes	Yes
	Cycle & Soak™		Yes	Yes	Yes	Yes	Yes
	Decoder-based diagnostic test		No	Yes	Yes	Yes	Yes

** with Hybrid Module & additional MIMs - ** with Hybrid Module & additional MDIs - *** Requires 2nd wirepath keycode and hybrid keycode for 4 wire paths (3000 ICMs)*

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Rain Bird Integrated Control™ Systems

A new level of performance-the controller built right into the rotor or valve.

Simple. Intelligent. For now. For the future.

After years of unrivaled leadership in irrigation technology, Rain Bird has done it again. Rain Bird is proud to introduce the IC™ System—Integrated Control System. The IC™ System combines the rotor or valve and the controller into one device for unmatched control. So simple. So intelligent. Control is built right in.

The IC™ System manages your irrigation operations today and provides for future development and expansion. IC Rotors and IC Valves are easily installed. Two simple splices make the connection.

The IC™ System — no field controllers, decoders, secondary wiring or unnecessary splices. Reducing many of the things that can break down, wear out or malfunction.

The new Rain Bird IC™ System — Now that's intelligent!

Fully integrated control. That's intelligent.

Where's the field control?
It's right here.

Where's the surge protection?
It's right here.

Where's the intelligence?
It's built into the rotor and valve.

Where are the satellite controllers?
GONE.

Where are the decoders?
GONE.

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Superior in every way.

More Reliable

The IC™ System is a simple yet sophisticated controller/rotor/valve system built around a new generation of Rain Bird's proven solenoid and satellite technology. Simplicity results in reliability. Easy to manage…consistent…dependable…the IC™ System offers reliable performance day after day, year after year.

Easier Maintenance

The IC™ System is capable of intelligent two-way communication with each and every IC Module on the golf course. Almost all troubleshooting can be managed through intuitive diagnostics built into the central control software. The learning curve for maintenance is minimal. Course technicians can easily accomplish most maintenance tasks.

Visually Appealing

Since Integrated Control Technology™ is built right into the rotor or valve, the entire control system is below ground. You no longer have to hide field controllers. The below ground system also offers protection against damage from vandalism, flooding and insects.

Easier To Design

The IC™ System is easier to design—only simple calculations are required. It eliminates an array of troublesome considerations—there are no satellite controllers to design around or conceal, and no decoders to bury. The IC™ System helps your design budget go further.

Easier To Install

The IC™ System is easier to install—no need to manually enter addresses. With a simple swipe you can scan each IC Rotor and Valve. Two easy splices attach the unit to the MAXI™ Wire. Because it requires less copper wire and fewer splices, the IC™ System saves materials, labor and time.

Easier To Expand

The IC™ System is easier to expand—IC Series Rotors and Valves can be added almost anywhere there is MAXI Wire—up to an amazing capacity—3,000 ICMs x 8 interfaces = 24,000 ICMs. All with superior 20kV surge protection.

Want to learn more?

To see first-hand how the Rain Bird IC™ System can simplify installation and maintenance, get the most return on your investment, and reduce ownership costs, view our product demonstration at www.rainbird.eu

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GO™

Specifications

Installation and Design

- GO™ II software-PC computer minimum specification, Pentium 4 (or higher) microprocessor, 1.7 GHz (min) clock speed, 512 megabytes (min) RAM, 40GB hard drive (min), 56K modem, CD–RW drive, 32 MB videocard, LCD monitor, printer.
- Voltage: 120 or 240 VAC, 50/60 Hz.
- IC Interface Unit—indoor mount.
- IC Modules mount on rotors and/or valves.

Functional

- Operates up to 18 golf holes.
- Rain Bird GO software operates in Windows™ environment and only supports operation of the IC Rotor and Valve-based system.
- **Two-Wire System** - A typical direct communication, the IC™ system includes a central computer connected to a wall-mounted Interface (IC Interface or ICI). The ICI communicates to various IC Modules attached to rotors and valves in the field over a two-wire path. This system controls the control valves and the valve-in-head sprinklers on the same two-wire path. The ICI connects to the Central Control via a USB connection.
- The Rain Bird GO™ Central software controls irrigation activities through spreadsheet.

Programming

- A unique **QuickIRR™** method of programming provides a quick and easy method to automatically build programs to meet all irrigation challenges and allow programming by specific areas and designating sequence of operation of these areas.
- Built in **Flo-Guard®** and a simplified **Flo-Manager®** feature automatically distribute and limit flow within the system to eliminate hydraulic "overload" while maintaining maximum system operating efficiency with or without entering flow zone or branch piping data.
- During actual operation of the GO™ system, areas being irrigated can be observed on the course log or course monitor database screens. A system Flo-Bar and flow analysis chart shall provide complete system flow information, including flow with NO "feedback", flow with "feedback", "paused" flow and total flow demand as well as the total system capacity.
- A **WaterSaver** feature provides water budgeting capabilities from 0% to 300% in 1% increments at the system level, at the program level or at the schedule level.
- A **Dry run** feature provides for testing of a program and making necessary adjustments before actually operating it in the field.
- Full system remote control with **Freedom**™ System (optional).
- Direct manual access of any stations, at any time.

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STRATUS™ LT

Specifications

Installation and Design

- Stratus LT software—PC computer minimum specification, Pentium 4 (or higher) microprocessor, 1.7 GHz (min) clock speed, 512 megabytes (min) RAM, 40GB hard drive (min), 56K modem, CD–RW drive, 32 MB video card, LCD monitor, printer.
- Voltage: 120 or 240 VAC, 50/60 Hz.
- TWI or SDI Interface Unit—indoor mount.

System Definition:

- Operates up to 18 golf holes.
- Basic software operates hard-wired satellite system, decoder-based system or IC system.
- Software available in 12 European Languages

Unique features

- Built-in **Flo-Manager®** feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear.
- **Rain Watch** is an Intelligent rainfall reaction system that uses up to four tipping bucket rain cans to detect and react to local rainfall.
- **QuickIRR** programming feature allows programming by specific areas and designating sequence of operation.
- Exclusive **Cycle+Soak™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course Monitor** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump profiling** feature limits power consumption during peak periods.
- Industry's only innovative, guided initialization and start-up programming resulting in customized **Quick start** program.
- **Dry Run** feature provides for test of a program and making necessary adjustments before actually operating it in the field.

Optional

- **Smart Sensors** allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules, or pause/ resume the same.
- **Weather software** allows central to communicate with Rain Bird weather station, being able to monitor and receive an updated and calculated ET value for establishing run times.
- **Smart Pump™** links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change.
- **Map utilities** allows end-users to measure distances and areas defined in irrigation map.

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STRATUS™ II

Specifications

Installation and Design

- Stratus™ II software—PC computer minimum specification, Pentium 4 (or higher) microprocessor, 1.7 GHz (min) clock speed, 512 megabytes (min) RAM, 40GB hard drive (min), 56K modem, CD–RW drive, 32 MB video card, monitor, printer.
- Voltage: 120 or 240 VAC, 50/60 Hz.
- MIM, ICI or MDI Interface Unit—indoor mount or combination of any two interface units in hybrid installation..

System Definition

- Operates up to 27 golf holes.
- Basic software operates hard-wired satellite system, IC system or decoder-based system.
- Software available in 12 European Languages.

Unique Features

- Built-in **Flo-Manager**® feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear.
- **Rain Watch** is an Intelligent rainfall reaction system that uses up to four tipping bucket rain cans to detect and react to local rainfall.
- **Quickirr** programming feature allows programming by specific areas and designating sequence of operation.
- **Smart Sensors** allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules, or pause/ resume the same.
- **FloWatch™** uses flow sensors to continually monitor the flow conditions on the golf course and control master valves in the event of an overflow situation.
- Exclusive **Cycle + Soak**™ feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course Monitor** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump Profiling** feature limits power consumption during peak periods.
- Industry's only innovative, guided initialization and start-up programming resulting in customized **Quick start** program.
- **Dry Run** feature provides for test of a program and making necessary adjustments before actually operating it in the field.

Optional

- Rain Bird **MI Series Mobile Controllers** provide remote irrigation control via a web-enabled cell phone. You can execute commands to turn stations and programs on and off. You can review the status of programs and stations to see if they are running, how much water is running, how long they have been running, etc. You can change a program start time or the runtime parameters of a particular station. The options available depend on the license.
- **Station Layers-Map/Operation**- allows for the turning on/off of different map layers, and also the station resolution for monitoring, altering station properties, or programming.
- **Weather software** allows central to communicate with Rain Bird weather station, being able to monitor and receive an updated and calculated ET value for establishing run times.
- **Smart Weather** software allows the same communication as regular Weather Software, but also allows user to set and reprogram the data logger of the weather station to activate alarms based on user-defined conditions for any of the instruments, i.e., rainfall, wind speed, temperature, humidity, etc.
- **Hybrid** allows multiple field interface devices on a central. These could be multiple MIMs or MIDs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system or an IC System operate from the same central.
- **Smart Pump**™ links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, thesoftware adjusts the irrigation cycle based on this change.
- **Map Utilities** allows end-users to measure distances and areas defined in irrigation map.

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NIMBUS™ II

Specifications

Installation and Design

- Nimbus™ II software-PC computer minimum specification, Pentium 4 (or higher) microprocessor, 1.7 GHz (min) clock speed, 512 megabytes (min) RAM, 40GB hard drive (min), 56K modem, CD–RW drive, 32 MB video card, LCD monitor, printer.
- Voltage: 120 or 240 VAC, 50/60 Hz.
- MIM, IC or MDI Interface Unit—indoor mount.

Functional

- Operates up to 36 golf holes.
- Basic software operates hard-wired satellite system, or decoder-based system.
- Software available in 12 European Languages.
- All data logging maintained at the computer for instant review and retrieval.
- **Quickirr™** programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.

Unique Features

- Built-in **Flo-Manager**® feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear.
- **Rain Watch** is an Intelligent rainfall reaction system that uses up to four tipping bucket rain cans to detect and react to local rainfall.
- **Station Layers-Map/operation**- allows for the turning on/off of different-map layers, and also the station resolution for monitoring, altering station properties, or programming.
- **Quickirr™** programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.
- **Smart sensors** allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules, or pause/ resume the same.
- **FloWatch™** uses flow sensors to continually monitor the flow conditions on the golf course and control master valves in the event of an overflow situation.
- **Exclusive CYCLE + SOAK™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course Monitor™** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump profiling™** feature limits power consumption during peak periods.
- Innovative industry first, guided initialization and start-up programming resulting in customized **Quick start™** program.
- **Dry run™** feature provides for test of a program and making necessary adjustments before actually operating it in the field.
- **Virtual Weather™** mode allows calculation of ET value based on manual data entry.
- Unique **Cost estimator™** feature projects your water and power costs for an irrigation circle. Can greatly assist you in establishing your budget requirements.
- **Smart Weather** software allows the same communication as regular **Weather Software**, but also allows user to set and reprogram the data logger of the weather station to activate alarms based on user-defined conditions for any of the instruments, i.e., rainfall, wind speed, temperature, humidity, etc...

Optimal

- **Rain Bird MI Series Mobile Controllers** provide remote irrigation control
  via a web-enabled cell phone. You can execute commands to turn stations and programs on and off. You can review the status of programs and stations to see if they are running, how much water is running, how long they have been running, etc. You can change a program start time or the runtime parameters of a particular station. The options available depend on the license.
- **Multiple Weather stations** allows the central to communicate with up to 5 different weather stations throughout the golf course to assign different weather stations.
- **Smart pump™** links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change (optional).
- **Hybrid** allows multiple field interface devices on a central. These could be multiple MIMs or MIDs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system or an IC System operate from the same central.
- **Map utilities** allows end-users to measure distances and areas defined in irrigation map.

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CIRRUS™

Specifications

Installation and Design

- Cirrus™ software PC computer minimum specification, Pentium 4 (or higher) microprocessor, 1,7 GHz (min) clock speed, 512 megabytes (min) RAM, 40GB hard drive (min), 56K modem, CD–RW drive, 32 MB video card, LCD monitor, printer.
- Voltage: 120 or 240 VAC, 50/60 Hz.
- MIM, ICI or MDI Interface Unit—indoor mount or combination of any two interface units in hybrid installation.

System Definition

- Operates up to 54 golf holes.
- Basic software operates hard-wired satellite system, decoder-based system, IC system or combination of two communication designs in hybrid installation.

• Software available in 12 European Languages.

Unique Features

- Built-in **Flo-Manager®** feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear.
- **Rain Watch** is an Intelligent rainfall reaction system that uses up to four tipping bucket rain cans to detect and react to local rainfall.
- **Station Layers-Map/operation**- allows for the turning on/off of different map layers, and also the station resolution for monitoring, altering station properties, or programming.
- **QuickIRR™** programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.
- **Smart Sensors™** allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules or pause/resume the same.
- **FloWatch™** uses flow sensors to continually monitor the flow conditions on the golf course and control master valves in the event of an over-flow situation.
- Exclusive **Cycle + Soak™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course Monitor™** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump profiling™** feature limits power consumption during peak periods.
- Innovative, guided initialization and start-up programming resulting in a customized **Quick start™** program.
- **Dry Run™** feature provides for test of a program and making necessary adjustments before actually operating it in the field.
- **Virtual Weather™** mode allows calculation of ET value based on manual data entry.
- Unique **Cost estimator™** feature projects your water and power costs for an irrigation circle. Can greatly assist you in establishing your budget requirements.
- **Smart Weather™** scheduling monitors evapotranspiration (ET) rates and modifies schedules based on actual course demand.
- **Smart pump™** links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change (optional).
- **Map utilities** allows end-users to measure distances and areas defined in irrigation map.
- **Multiple Weather stations** allows the central to communicate with up to 5 different weather stations throughout the golf course to assign different weather stations.
- **Hybrid** allows multiple field interface devices on a central. These could be multiple MIMs or MIDs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system or an IC System operate from the same central.

Optional

- Rain Bird **MI Series Mobile Controllers** provide remote irrigation control via a web-enabled cell phone. You can execute commands to turn stations and programs on and off. You can review the status of programs and stations to see if they are running, how much water is running, how long they have been running, etc. You can change a program start time or the runtime parameters of a particular station. The options available depend on the license.

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INTEGRATED SENSOR SYSTEM™ (ISS)

Specifications

Features and benefits

- **Dynamic integration. Fully automatic.** When paired with a Rain Bird Central Control System, the Integrated Sensor System can automatically adjust sprinkler run times to reach maintain desired moisture levels, minimizing water consumption, resulting in healthier turf and better playing conditions.
- **Intelligent monitoring.** As a standalone system, the ISS analyses soil moisture and calculates water budget recommendations for any golf course.
- **Maximum accuracy. Zero calibration.** The ISS uses research-grade soil sensors backed by years of field experience. These sensors have been vetted by multiple academic peer-reviews. The ISS takes highly accurate readings of soil moisture, salinity and temperature immediately following installation and without calibration – for easy installation and immediate accuracy.
- **Adjustable soil sensing rate.** With the Rain Bird ISS, the frequency of soil sensing measurements can be adjusted to match course needs.
- **Dependable results.** Sensor readings are automatically stored by the data logger on Secure Digital High Capacity (SDHC) storage cards. Data is not lost due to power outages or wireless communication issues.
- **Dependable communication.** The ISS uses a proven wireless mesh network which ensures the necessary range of transmission and a secured traffic from the data logger to the Soil Manager™ software.
- **Simple installation.** Network devices (data loggers and repeaters) are battery-powered and easy to install. There is no AC power source to worry about.
- **Improves turf health, course consistency and playability.** The ISS can help deliver more consistent turf quality, anticipate plant stress, weed germination, pest infestations and other factors. You can use less water to flush salts from the soil profile.
- System capacity: 200 sensors, 20 ISDL-2400 data loggers, 40 ISR-2400 repeaters per ISG-2400 gateway.
- Frequency of sensor readings can beadjusted between 2 and 120 minutes. Sensor sampling rate under 15 minutes will reduce battery life.

Electrical Input:

- ISDL-2400 data logger: Four (4) D-cell alkaline batteries
- ISR-2400 data logger: Four (4) D-cell alkaline batteries
- Minimum battery life:

Twelve (12) months at 20°C (68°F) assuming 100 sensor readings per day (every 15 minutes)

- ISG-2400 gateway: Powered via PC USB port
- Each gateway and repeater shall communicate directly with up to eight (8) network devices (data loggers and repeaters) to enable wireless mesh capability and ensure optimum radio communication.

Grounding Requirements:

- ISDL-2400 data logger and ISR-2400 repeaters are battery-powered devices and do not have grounding requirements.

Wireless Network:

- **General:**
  - 2.4 GHz ISM DSSS (Digital Sequencing Spread Spectrum) unlicensed frequency
  - Power output 10mW and 63mW per country of use regulations
  - Protocol: DigiMesh™ proprietary mesh network
  - Communication Range: Unobstructed line of sight 800 yards min.
- **Data logger:**
  - Capacity: 18 Rain Bird specified TSM-3 Soil Sensors that use SDI-12 protocol. Nine sensors per channel on two channels.
  - Electrical input: 4.1-6.5V using four (4) D-cell alkaline batteries
  - Data storage: Sensor data stored on 4GB or higher capacity SDHC card (card included)
  - Upgrades: Firmware can be upgraded using SD card
  - Display: 10-position menu and 4 soft keys for automatic and manual operation including system settings, (language, date, time, units), automatic and manual sensor operation, sensor setup and special features
  - Display shall be backlit
  - Languages: • English • French • Spanish • German • Portuguese • Swedish • Italian
  - External antenna tuned for 2.4 GHz communication
  - Operating temperature: -10°C to 54°C (14°F to 130°F)
  - Storage temperature: -40°C to 66°C (-40°F to 150°F)
- **Repeater:**
  - Electrical input: 4.1-6.5V using four (4) D-cell alkaline batteries
  - Languages – Same as Data Logger
  - Display shall be backlit
  - Firmware upgrade using SDHC card (card not included)
  - 4 soft keys
  - Operating temperature: -10°C to 60°C (14°F to 140°F)

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- Battery Operating temperature: -20°C to 54°C (-4°F to 130°F)
- Storage temperature: -40°C to 66°C (-40°F to 150°F)

• Gateway:
- USB to serial to USB

Sensors:

• TSM-3 Soil Sensors
- Sensor shall connect to a Rain Bird ISDL-2400 Wireless Data and provide soil moisture, salinity and temperature readings
- Sensor shall take accurate readings immediately following installation and without calibration
- Sensor shall measure and report:
  - Soil temperature
  - Absolute water fraction by volume (WFV) in % with loam calibration
  - 0.1 to 15 dS/m in-soil electro conductivity
  - 1% stable WFV readings over the following conditions:
  - -30°C to 55°C (-22°F to 131°F) (non frozen soil)
  - 0.1 to 4 dS/m EC
- Robust, long life materials and construction
- Industry standard SDI-12 interface
- Shall connect to a data logger through an 18-gauge three-wire cable that is at most 90 meters long. Sensor itself shall have a 8 meters long 18-gauge three-wire cable. Additional cable, not provided, is required to reach 90 meters.
- Low power operation:
  - 9 to 20 VDC
  - <1 mA typical standby mode
  - 30 mA moisture read mode

Software:

• Hardware requirements, same as Rain Bird central:
- Microsoft Windows XP Professional SP3
- PC with 300 KHz or higher processor
- 128 MB of RAM
- 1.5 GB of available hard disk space
- Power profile of computer should be configured to not sleep

Languages:

• English • French • Spanish
• German • Portuguese • Swedish • Italian

• Soil Manager (monitoring)
- Dashboard view
- Sensor graph view with annotation capability
- Sensor table view with annotation and export to Excel capabilities
- Communication, power and sensor alerts
- Diagnostics including network device battery level and signal strength status (RSSI)
- User-defined email alerts for out-of-range soil moisture, salinity and temperature values, communication and power status
- Water budget recommendations available when one sensor is linked to a particular irrigation program

Soil Manager : (monitoring with dynamic central integration enabled)
- Same as monitoring version
- Full integration with any Rain Bird irrigation central control software version 7 or higher
- Sprinkler runtime adjustment based on soil moisture measurements and water budget predictions

How to Specify

IS - X - X - XX - X - X - X

Brand

Product:
DL = Data Logger(Data Logger)
R = Repeater
G = Gateway

Frequency:
1 = 2,4 GHz

Output Power:
10 = 10 mW
63 = 63 mW

Power Supply:
3 = Battery

Language:
1 = All but
2 = Chinese

Specifier:
0

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RAIN WATCH™
Maximizes water efficiency

Specifications

Patented Rain Bird® RainWatch™ technology maximizes waterefficiency, while minimizing system wear and tear, through intelligent, real-time decision-making based accurate rainfall measurement.

Features and benefits

- The industry's first active rainfall m monitoring and response system.
- The only system designed to automatically react to rainfall and adjust sprinkler application rates to take full advantage of natural rain, thereby eliminating over-watering.
- Saves water and electricity, while keeping the course drier and more playable, by pausing, adjusting or canceling irrigation in the event of rainfall.
- Results in reduced wear and tear on irrigation system components.
- An integral part of Rain Bird Central Control Software versions 4.0 and higher.

How Rain Watch™ manages rainfall

- Stationed throughout the course, one to four high-resolution RainWatch rain cans collect environmental data.
- A rotor can be set to react to any of the rain cans.
- The central control system continuously polls each rain can.

Rainfall data received by the system is used to make intelligent decisions based on user-defined responses:

System Response: For course-wide reactions

Program Response: For program-specific responses

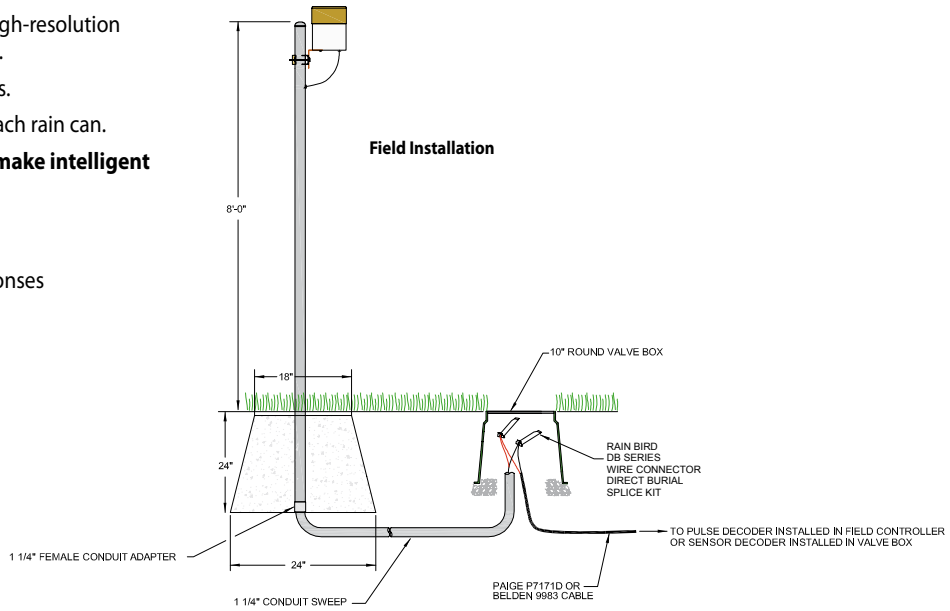
No-Action Response: For monitoring only

Intelligent responses include:

- Pause
- Resume
- Adjust runtimes and resume
- Cancel

An example of Rain Watch™ in action

- Your daily irrigation schedule calls for 5 mm of precipitation.
- A storm begins and once accumulated rainfall reaches your desired 1 mm threshold, RainWatch suspends irrigation.
- The storm passes after putting down 2.8 mm of rain.
- Rain Bird software automatically adjusts remaining runtimes for active stations, as well as those stations yet to run.
- Natural participation is seamlessly integrated into scheduled irrigation, resulting in a water savings of 2.8 mm.



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SmartPump™
Improves pump station performance

Specifications

Features and benefits

- Rain Bird's SmartPump™ is a powerful central control software tool that improves pump station performance more than any comparable product on the market. It integrates your irrigation system from Reservoir to Rotor,™ constantly comparing actual flow to expected flow. By making smart, real-time decisions based on this information, it optimizes your system — saving water, conserving electricity and reducing wear and tear on your valuable pumping system.

Actual flow measurement

- Unlike other irrigation central control software, SmartPump bases its decisions on actual flow, not estimated flow. By using accurate information — in real time — SmartPump automatically balances supply with system demand. That means greater efficiency and an end to wasted water and electricity.

24-hour pump supervision

- With SmartPump, you can relax knowing your system will instantly respond to actual field conditions with the right decisions. For instance, if a pipe breaks, SmartPump will stop water flow to the pipe to prevent turf damage. Or, if the pump station fails, SmartPump will make immediate water demand adjustments to keep the system from shutting down permanently. It's like having your own irrigation supervisor at every sprinkler, 24/7.

Integration meets intelligence

- SmartPump seamlessly integrates your entire irrigation system. It automatically starts waiting sprinklers or pauses active sprinklers to reduce flow or increase demand, keeping your irrigation system running at peak efficiency at all times.

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PAR+ES CONTROLLER

PAR+ES CONTROLLER

Specifications

Installation/Design

Mounting/Configuration: Pedestal.

Plastic Pedestal Dimensions:
40,6 cm W x 91,4 cm H x 47,0 cm D.

Pedestal Material: Sturdy impact resistant double walled Ascorene plastic.

Electrical Input: 230VAC @ 50 Hz.

Electrical Output: 26,5 VAC, 5,25 AMP.

Standard Surge Protection: Included in all models.

Grounding Requirement: Less than 10 ohms.

UL & C-UL listed and CE Approved: yes.

Functional

Configurations: Standalone Controller, two-wire satellite.

Station Capacity: 72 stations, 16 in base model, upgradeable in 8 station increments.

Modules/Expansion: Easily upgradeable in field by addition of 8-station, plug-in Output Station Modules (OSMs) for up to 72 stations per controller.

Station Load Capacity: Up to four 24VAC, 7VA solenoid valves per station.

Master Valve Activation: Activate master valve output with station activation.

Sensor Response: Sensor activation cancels irrigation at controller.

Front Panel Lighting: LEDs and backlit liquid crystal display (LCD) make programming easy in poor lighting.

Standard Station Lights: OSM lights provide easy identification of active stations.

Optional Station Switches: Turn stations on or off quickly for easy operation and troubleshooting.

Programming

Automatic Schedules: 6 automatic and 2 multimanual, each with up to 12 start times per day and capable of operating simultaneously for standalone operation.

Multiple Schedule Operation: No schedule limit when operated with Rain Bird Central Control Systems.

Water budgeting: 0-200%, in 10% increments.

Remote Manual Operation: Yes, with the Freedom™ system (optional) and the Rain Bird Central Control software.

Station Run times: 1-120 minutes, in 1 minute increments.

Simultaneous Operation: Heavy-duty transformer permits simultaneous operation of up to 12 solenoids.

Irrigation Control: Variable or Weekday programming, for weekday cycle or for irrigation every other day, every three days, up to every nine days.

Quick Programming: Copy and paste buttons make programming quick and easy.

How to Specify/Order:

PAR+ES - 16 - XX

16 Stations

Model
PAR+ES

Configuration
Blank = Stand Alone
2 = Two-Wire
OSM – 8 stations output modules

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SATELLITE CONVERSION Kit

Features

To convert any type of 12-station satellites or controllers, (electrome-chanical, Toro Varitime, stand alone controller, etc…) into a compatible decoder system (Stratus™LT, Stratus™ II, Nimbus™II, Cirrus™, ESP-LXD.
The Satellite Conversion Kit is a simple electric board set in a plastic box including :

- 12 relays
- Decoders pre-assembled
- 1 connector for decoder signal cable
- 1 connector for 12 outputs to the stations
- 4 commons and the 24 volt input (phase and neutral).

The Kit can use the 24 volts coming from the satellite transformer or from any 24 volt AC power supply.
No transformer included.
The kit works with decoders (included).

Specifications

- **Number of contacts per relay:** 1 NO
- **Nominal intensity per relay:** 10 A
- **Max intensity per relay:** 20 A
- **Nominal power per relay:** 2500 VA
- **Type of contact:** AgNi
- **Solenoid:** Voltage 6 VDC - 55 Ohms
- **Power:** 0,65 W
- **Insulation resistance:** 20.102 Ohm
- **Temperature:** -40 to +70°C
- **Connections:** Printed board
- **Size (mm):** 300mm x 230mm x 87mm

How to Specify/Order:

Satellite Conv. Kit PN: J00111

DECODERPUL/DECODERSEN

Decoder for golf central control systems operating with satellites

Specifications

PULSE DECODER

Connected to a Pulse Flow Meter, sends the pulse back to the computer via the field interface (MIM).

- **Flow control,** SEEF (Search and Eliminate Extra Flow), instant flow measurement, (Cirrus only).
- **Type of flow meter to be used :** All types of flow meters sending dry contact pulse. No voltage, no frequency.

Model : DECODERPUL

SENSOR DECODER

To connect any type of sensor to the interface (MIM).
Rain sensor, moisture sensor, pump alarm, etc.

- Connected to the 2-wire path, the sensor will communicate to the computer all sensor status changes.
- Used to start, stop, pause or resume irrigation programs.

Model : DECODERSEN

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PAR+ ES DECODER CONTROLLERS

Specifications

PAR+ES Decoder Controller:

Station Capacity: 72 decoder addresses, maximum 12 solenoids operating simultaneously (50 Hz)

Configurations: Standalone, two-wire, Link and Link with Radio

Electrical Input: (50/60 Hz)
115 VAC Nominal 98 – 132 VAC
220 VAC Nominal 208 – 232 VAC
240 VAC Nominal 225 – 255 VAC

Electrical Output: 26.5 VAC, 5.25 AMP

Station Load Capacity: Up to two Rain Bird 24 VAC solenoids per station depending on decoder type :

Coils per station

FD-101	FD-102	FD-202	FD-401	FD-601
1	2	2	1	1

Plastic Pedestal Dimensions:
Width: 16" (40,6 cm)
Height: 36" (91,4 cm)
Depth: 18½" (47,0 cm)

Programs: No limit with Rain Bird Central Control Systems. Six (6) automatic (12 start times each) and two (2) manual in standalone mode

Water Budget: 0 – 200% in 10% increments

Station Runtimes: 1 – 120 minutes, in 1 minute increments

Languages: English, French, German, Italian, Japanese, Portuguese, Spanish and Dutch

Grounding Requirements: Less than 10 ohms

Compliance: UL & C-UL Listed, CE approved, C-Tick Compliant and FCC

Max Wire Length Between Controller and Decode (with decoders evenly distributed):

2.5mm^2

Star Design 4 km

Loop Design 16 km

Max Wire Length Between Decoder and Rotor: 200m (2.5mm^2) with FD-101, FD-102, FD-202 & FD-401 - 100m (2.5mm^2) with FD-601

Max Wire Paths: Four (4), plus multiple branches per wire path

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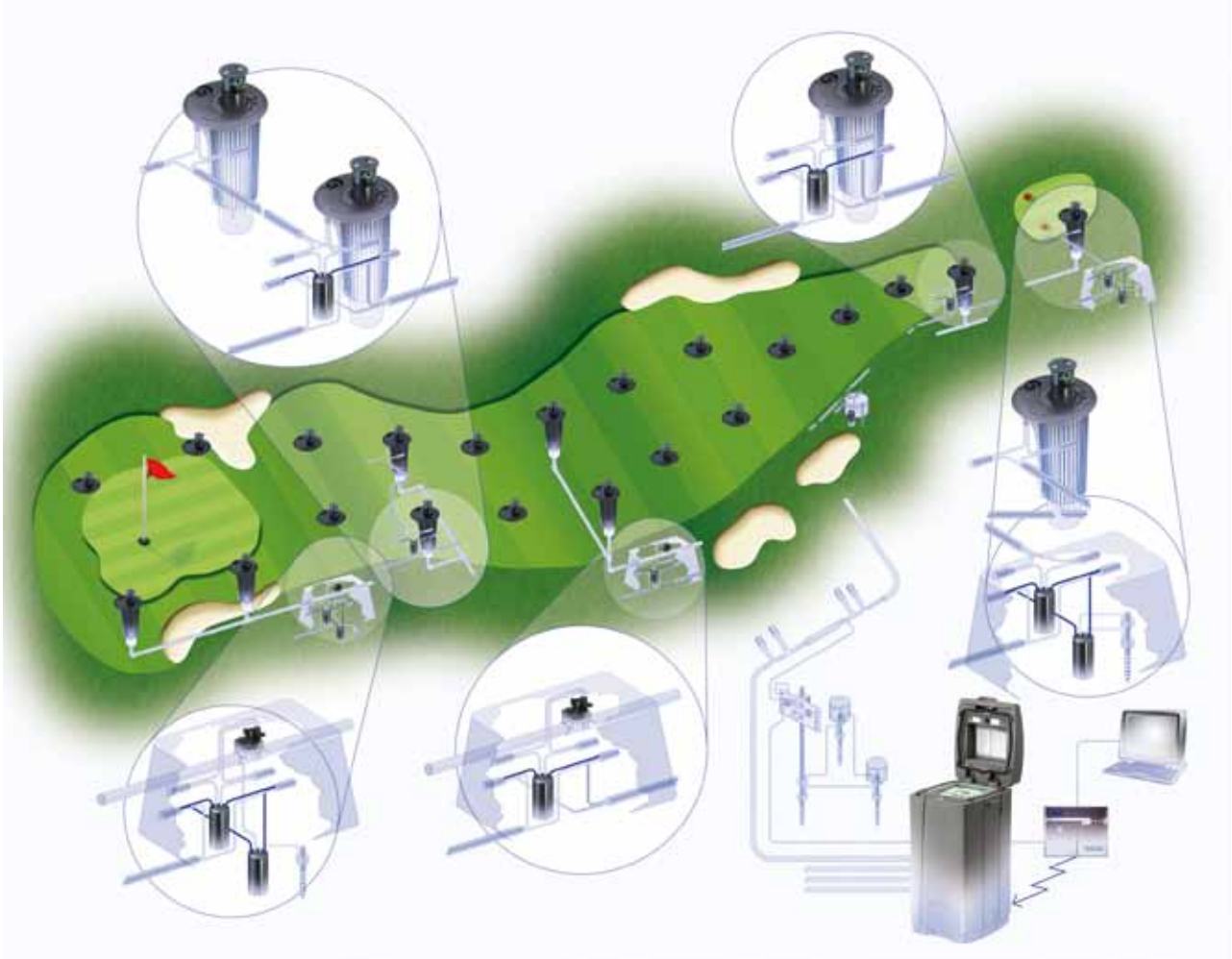
PAR+ES DECODER CONTROLLERS



The PAR+ES Decoder Controller combines the features and benefits of a satellite controller system with those of a decoder system. Benefits for the user include:

- Easy Installation
- Reduced Installation Costs
- Easy Expansion

The concept is simple:

1) Install the PAR+ES Decoder controller.
2) Install the secondary wire path.

- Uses up to 90 percent fewer wires than conventional hardwire systems.
- Built-in diagnostic tools.
- Compatible with all Rain Bird Golf Decoders (i.e. FD-101, FD-102, FD-202, FD-401 and FD-601).
- Operates as a standalone controller or add a Rain Bird Central Control System for greater control.
- Operates up to 72 decoder addresses.

How to Specify/Order:

PAR+ES -DEC- X - 72

Model

Configuration

Blank = Standalone
2 = two-wire
L = Link

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ESP-LXD DECODER CONTROLLER

Two-wire Controller with Flow Management.

- The ESP-XD controller has been designed to maintain the look, feel and ease of programming of the ESPLXM controller but with an interface to a two-wire path for decoder-based irrigation
- The ESP-LXD controller can manage up to 50 stations but can easily be expanded for use with up to 200 stations
- Flow Management is also built in to every ESP-LXD controller

CE 0123

Controller Features

- UV-resistant, outdoor-rated plastic, locking, wall-mount case
- Supported decoders: FD-101, FD-102, FD-202, FD-401, FD-601
- Also supports SD-210 sensor decoders (flow sensing and weather sensor support) and LSP-1 line surge protectors (one per 150 m of two-wire path required)
- User-selectable six language
- Support 50-station capability standard expandable via 75-station modules to 200 stations
- Four sensor inputs (one wired plus up to three decoder-managed) with override switch
- Programs can be backed up and restored with the optional PBC-LXD

Water Management Features

- Built in to every ESP-LXD module is Rain Bird's Flow Smart software for flow management – simply attach 1 to 5 SD-210 sensor decoders and flow meters (not included) to the twowire path, and the controller will do the rest. A wide variety of flow functionality is available, including user-adjustable Seek and Eliminate Low Flow (SELF) and Seek and Eliminate Excessive Flow (SEEF) capability to allow you to rest easy knowing that in the event of an unusual flow situation, such as a mainline break, your controller will manage the situation for you.
- Cycle+Soak™ by station
- Rain Delay
- Calendar Day Off
- Programmable Delay Between Stations by program
- Master Valve programmable by station
- Sensor programmable by station
- Alarm light with external case lens
- Electronic circuit breaker
- Variable test program
- Two-wire diagnostics to simplify and expedite troubleshooting
- Station timing: 0 min to 12 hrs
- Program level and global Monthly Seasonal Adjust; 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD); ABC programs stack, ABCD overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd no 31st, Even, and Cyclical dates

Specifications

- Input required: 230 VAC ± 10%, 50Hz
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the schedule
- Multi-valve station capacity: up to 2 solenoid valves per station; simultaneous operation of up to eight solenoids and/or master valves
- Dimensions (WxHxD): 36.4 x 32.2 x 14.0 cm

DIMENSIONS

Width: 36,4 cm
Height: 32,2 cm
Depth: 14,0 cm

MODELS

IESPLXDEU: 230V, include one 50-station module

ESP-LXD-SM75 STATION MODULE

Application

The ESP-LXD controller is capable of managing up to 50 stations right out of the box. If additional station capacity is needed, it can quickly and easily be added through the use of ESP-LXD-SM75 station modules, each of which adds an additional 75 stations up to a maxi mum of 200 stations. The SM75 modules snap onto the controller backplane.

Model

ESP-LXD-SM75: 75-station module

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FD-101

Specifications

Model: FD-101 single field decoder (1 address, 1 solenoid)
Mounting: In valve box or direct burial
Power Draw: 0.5 mA (idle) 18 mA (Per active valve)
Dimensions:
Length: 57 mm, Diameter: 40 mm
Station: 1
Wires: Blue to cable, white to solenoid
Output Power: Adjustable from central controller
Encapsulation: Fully waterproof
Address: Precoded from factory (i.e. no switches)
Electrical input:
- Nominal voltage: 33VAC from line
- Minimum voltage: 21VAC
- Standby current: 0,5 mA
- Wiring: 2 x 14-gauge (1,5 mm^2) solid copper, PVC insulateded

Electrical Output:
- Max. voltage: 33VAC
- Max. load: 1 Rain Bird solenoid

Environment:
- Working range: 0 to 50° C
- Storage range: -20 to 70° C
- Humidity: 100%

FD-102

Specifications

Model: FD-102 single field decoder (1address, up to 2 solenoids)
Mounting: In valve box or direct burial
Power Draw: 0.5 mA (idle) 18 mA (Per active valve)
Dimensions: Length: 85 mm, Diameter: 45 mm
Station: 1
Wires: Blue to cable, white to solenoid
Output Power: Adjustable from central controller
Encapsulation: Fully waterproof
Address: Precoded from factory (i.e. no switches)
Electrical input:
- Nominal voltage: 33VAC from line
- Minimum voltage: 21VAC
- Standby current: 0,5 mA
- Wiring: 2 x 14-gauge (1,5 mm^2) solid copper, PVC insulated

Electrical Output:
- Max. voltage: 33VAC
- Max. load: 2 Rain Bird solenoids

Environment:
- Working range: 0 to 50° C
- Storage range: -20 to 70° C
- Humidity: 100%

FD-202

Specifications

Model: FD-202 dual address field decoder (2 addresses and up to 2 solenoids per address)

Mounting: In valve box

Power Draw: 1 mA (idle) 18 mA (Per active solenoid)

Dimensions:
- Length: 85 mm
- Diameter: 45 mm

Stations: 2

Wires: Blue to cable, white and brown to solenoids

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical input:
- Nominal voltage: 33VAC from line
- Minimum voltage: 21VAC
- Standby current: 1,0 mA
- Wiring: 2 x 14-gauge (1,5 mm^2) solid copper, PVC insulated

Electrical Output:
- Max. voltage: 33VAC
- Max. load: 4 Rain Bird solenoids (2 per address)

Environment:
- Working range: 0 to 50˚C
- Storage range: -20 to 70˚C
- Humidity: 100%

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FD-401

Specifications

Model: FD-401 four-in-one field decoder (4 addresses and 1 solenoid per address)

Mounting: In valve box

Power Draw: 1 mA (idle)18 mA (per active valve)

Dimensions:
Length: 100 mm, Diameter: 65 mm

Stations: 4

Wires: Blue to cable, color-coded to solenoids

Surge Protection: Built-in LSP

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical Input:
Nominal voltage: 33 VAC from line
Minimum voltage: 21 VAC
Standby current: 1,0 mA
Input fuse: 300-500 mA, thermal
Wiring: 2 x14-gauge (1,5 mm^2) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33 VAC
Max. load: 4 Rain Bird solenoids (1 per address)

Number of Simultaneously Active Outputs: 4

Environment:
Working range: 0 to 50˚C
Storage range: -20 to 70˚C
Humidity: 100%

FD-601

Specifications

Model: FD-601 six-in-one field decoder (6 addresses and 1 solenoid per address)

Mounting: In valve box

Power Draw: 1 mA (idle) 18 mA (per active valve)

Dimensions:
Length: 100 mm, Diameter: 65 mm

Stations: 6

Wires: Blue to cable, color-coded to solenoids

Surge Protection: Built-in LSP

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical Input:
Nominal voltage: 33 VAC from line
Minimum voltage: 21 VAC
Standby current: 1,0 mA
Input fuse: 300-500 mA, thermal
Wiring: 2 x14-gauge (1,5 mm^2) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33 VAC
Max. load: 6 Rain Bird solenoids (1 per address)

Number of Simultaneously Active Outputs: 4

Environment:
Working range: 0 to 50˚C
Storage range: -20 to 70˚C
Humidity: 100%

How to Specify/Order:

FD-XXX

Model

101
102
202
401
601

SD-210
Sensor or Pulse decoder for golf central control systems operating with decoders

Specifications

PULSE DECODER

Connected to a Pulse Flow Meter, sends the pulse back to the computer via the field interface (MDI/SDI).

- **Use:** flow control, SEEF (Search and Eliminate Extra Flow), instant flow measurement.
- **Type of flow meter to be used:** All types of flow meters sending dry contact pulses. No voltage, no frequency.

SENSOR DECODER

Used to connect any type of sensor to the Golf Central Control Systems. Examples : Rain sensor, moisture sensor, pump alarm, etc. Connected to the 2-wire path, the sensor will communicate to the computer all sensor status changes.

Used to start, stop, pause or resume irrigation programs.

LSP-1
Surge Arrestor

Features

- Field line surge protection for Decoder Systems. Unique RB feature.
- For field installation, please contact your Rain Bird distributor.

PD-210
Pump Decoder

Features

- The PD-210 can control either 1 pump or an entire pump station.
- The PD-210 can also control a booster pump.

Specifications

Input: Signal line from ESP-LXD, Stratus™ LT, STRATUS™ II, NIMBUS™ II and CIRRUS™ Decoder versions.

Output: Dry contact 5A, normally open or normally closed.

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Rain Bird System Cable

Specifications

- Solid bare copper conductors.
- Core insulation : 0,7 mm Polyethylene (Blue and Black).
- Blue Polyethylene Outer Sheath.
- European standard : CEI 60502-1.
- Cable approved by Rain Bird for all Control System types : ESP-LXD, GO™, Stratus™ LT, Stratus™ II, Nimbus™ II, Cirrus™.
- **Number of conductors, cross section:** 2 x 2,5 mm².
- **Maximum current*:**
  - Buried : 46 A,
  - Open air : 33.
- **U (cos j = 0,8):** 14,8 V/A/km.
- **Outside Ø:**
  - mini 9,5 mm.
  - maxi 11,5 mm.
- **Weight:** 162 kg/km.

** Based on ambient temperature of 20°C for buried cable or 30°C for cable in the open air or always carrying power.*

DB Wire Connector

Application

Used for electrical connections in low voltage installations (< 30V). Allows electrical connections up to 3 wires sized 4mm². Waterproof.

Features

Reliability :

- Integrated one-piece design and integrated wire nut ensures reliable connection in one step.
- The Strain Relief ensures wires are secure and won't pull apart.
- Waterproof silicone sealant protects against corrosion.
- U.V. material ensures product performance does not degrade even after long periods of exposure to sunlight.

Specifications

Maximum wire voltage: 30V

Model

DB0025

DBR/Y-6

Application

Used for electrical connections in low voltage installations (< 30V). One unique reference, up to 3 wires sized 4 mm². Waterproof.

Features

Ease of Use:

- Connect solid or stranded copper wire.
- Transparent body – Help to check if electrical connections are correctly made.

Reliability:

- The DBR/Y-6 kit includes a Performance Plus Wire Connector (R/Y+) and a high impact, UVresistant polypropylene tube prefilled with moisture-resistant grease.

Specifications

- Maximum wire voltage: 30V

Model

- DBR/Y-6 kit

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MI Series Mobile Controllers

Remote access to your central control is now as convenient as the Internet, with mobile control. This software runs on your central control computer to provide remote irrigation control via a web-enabled cell phone.

The Rain Bird MI Series Mobile Controller is designed to work on a standard cell phone with Internet connectivity and offers the user far more remote options than other devices currently available in the marketplace.

Once connected to the Internet, up to 15 remote users are able to simultaneously perform remote operations ranging from activating sprinklers and programs, observing a variety of status information or directly editing central control sprinkler and program data. All activity is logged for convenient review.

Available in Basic, Advanced and Professional versions, you can execute commands to turn stations and programs on and off. You can review the status of programs and stations to see if they are running, how much water is running, how long they have been running, etc. You can change a program start time or the runtime parameters of a particular station. The options available depend on the license.

System Requirements

- Designed for Windows XP SP2 or higher.
- Requires an Internet connection to the central control.
- Requires a web-enabled cell phone with a data plan.

Software Requirements

- One of the following central control systems:
  - Rain Bird Cirrus™ version 6.0 or higher
  - Rain Bird Nimbus™ II version 6.0 or higher
  - Rain Bird Stratus™ II version 6.0 or higher
  - Rain Bird Stratus™ LT version 6.0 or higher
- The SmartPump™ accessory requires purchase of the SmartPump option available with the central control system selected, and a compatible pump station.
- Central control system computer must be running Windows® XP Service Pack 2 or higher.
- An Internet connection for the central control system computer is required. Note: The Internet connection can be a dial-up Internet account, a personal broadband connection (cable or DSL) or a corporate network.

Hardware Requirements

- A network interface card or modem and appropriate cabling (not included with MI Series software) may be required for the central control computer.
- CPU: 1.4 GHz or faster.
- Memory: 512 MB minimum.
- Hard Disk: 40 GB or more.
- A cellular phone with a web browser and a data plan from your cellular provider. Note: Some cellular phones may not be compatible with Rain Bird MI.

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The FREEDOM™ System

FREEDOM™

Features

- Provides remote communication with and operation of the Central Control system through telephone or radio (Radio Kit required).
- Allows user to start, stop, pause and resume stations, areas, programs and schedules.
- Allows user to manually turn system to off or auto mode.
- External transformer 220V/12V with power cord included.
- RS232 Serial cable for connection with PC included.
- Direct connection to telephone line through standard RJ11 cable, included. (Requires direct outside phone line).

Specifications

Freedom™

Power supply: 220V/12V external transformer.

Connection to PC serial port: standard RS232 cable.

Connection to telephone line:
standard RJ11 phone cable.

Colored LED's indicate:
Flashing green: power on Continuous green: active phone connection
Yellow: data in
Red: data out

How to Specify/Order:

Freedom™

Interface includes Phone and PC connecting cables.
Shipped with external transformer.

Weather Station WS-PRO2 for automatic scheduling and alarms

Specifications

Compatible Modules
- Automatic ET
- Multiple Weather Station
- Smart Weather Alarms Range

Communication options
- telephone
- hardwire up to 6000 mts

Power Supply Required
- 9,6 to 16 Vdc
- Optional solar panel

Temperature Range
-25° to +50°C

Air Temperature Sensor
-Operating range -25° to +50°C
- Accuracy ±1.5°C

Relative Humidity Sensor
- Operating 0-100%
- Accuracy ±6% - 90% to 100% RH
  ±3% - 0% to 90% RH

Rain Gauge Sensor
- Resolution 0,25mm

Solar Radiation Sensor
- Accuracy ±3%

Wind Direction Sensor
- Range 360° mechanical,
  356° electrical,
- Accuracy ±4°

Wind Speed Sensor
- Starting threshold 0,4 ms^{-1}

How to Specify/Order:

WS-PRO2-XX-X

- ***Weather Station***
- ***Professional Series***
- ***Connection***
  PH: Phone
  SH: Hardwire
  WL: Wireless
- ***Blank - Cable***
  S - Solar

Product Features

- **Reliable Sensor Input** – Equipped with a full sensor array which provides accurate measurement of six different types of weather data:
  • Air temperature
  • Wind speed
  • Solar radiation
  • Wind direction
  • Relative humidity
  • Rainfall
- **Superior Et Model** – Rain Bird's central control systems use weather sensor input to modify watering schedules by using the industry standard Penman-Monteith equation to determine evapotranspiration (Et) rates.
- **Automatic ET Download/ Selective Usage** – Automatically download weather data daily and calculate ET to determine run times for the entire system or specific areas, holes or stations.
- **ET Override** – Allows you to easily set certain programs to ignore ET values when determining runtimes.
- **Cost Savings** – ET adjusted run times apply only the water you need to replace the water lost from the soil reservoir. More efficient irrigation results in less water wasted for non-beneficial reasons resulting in reduced pump station operation, and lower energy costs.
- **Rain Bucket** – Allows rainfall from one day to be carried over to the following day(s) for more accurate run time calculations.
- **Multiple Station Capacity** – Connect up to five weather stations to one central control system for more precise ET values based upon different weather conditions around the golf course.
- **Max Rain Fall** – User-defined Max Rain Fall can be set to limit the amount of acceptable rainfall for clay soil types or other areas that are subject to high runoff.
- **Generate Alarm for...**
  • Rain
  • High or Low Ambient temperatures
  • High Winds
  • Rainfall Intensity
  • Soil Temperatures
  ... that exceed user-defined thresholds in user-defined time periods.
- **Automatic Shut Off/Turn On** – Rain Bird central control systems automatically shut OFF irrigation to the entire system or to specific areas (teebox, fairway, green, etc…) when alarm conditions are detected at the weather station. They also automatically turn ON irrigation when weather conditions return to the acceptable range for irrigation.
- **Automatic Pause/Resume** – Rain Bird central control systems automatically suspend irrigation to the entire system or specific areas (teebox, fairway, greens, etc…) when alarm conditions are detected by the weather station. They also automatically resume irrigation when weather conditions return to the acceptable range for irrigation.
- **Automatic Notification** – The WS PRO2 weather station can automatically notify you at the central control when alarm conditions exist.
- **Weather data reports** – Generate reports to show current or past weather conditions by the hour, day, week, month or year.
- **Unlimited data storage** – Store unlimited weather data at the Central Control.

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Weather Station WS-PRO LT for automatic scheduling

Specifications

Compatible Modules
- Automatic ET
- Multiple Weather Station

Communication options:
- wireless 2,4ghz radio up to 250 mts line of sight
- hardwire up to 6000 mts

Power supplied required
- 16 to 22 Vdc
- optional solar panel

Temperature Range: -40° to +50°C

Air Temperature Sensor
- Operating range : -40° to +50°C
- Accuracy: ±0,5°C

Relative Humidity Sensor
- Operating range 0-100%
- Accuracy ±6% - 90% to 100% RH ±3% - 0% to 90% RH

Rain Gauge Sensor
- Resolution 1 mm

Solar Radiation Sensor
- Accuracy ±2,5%

Wind Direction Sensor
- Range 360° mechanical, 356° electrical,

Wind Speed Sensor
- Starting threshold 0,78 ms^{-1}

Product Features

- **Reliable Sensor Input**–Rain Bird's easy-to-install Weather Stations come equipped with a full sensor array which provides accurate measurement of six different types of weather data:
  - Air temperature
  - Wind speed
  - Solar radiation
  - Wind direction
  - Relative humidity
  - Rainfall
- **Superior ET Model** – Rain Bird's central control systems use weather sensor input to modify watering schedules by using the industry standard Penman-Monteith equation to determine evapotranspiration (ET) rates.
- **Automatic ET Download/Selective Usage** – Automatically download weather data daily and calculate ET to determine irrigation times for the entire system or specific areas, holes or stations.
- **ET Override** – Allows you to easily set certain programs to ignore ET values when determining runtimes.
- **Weather data reports** – Generate reports to show current or past weather conditions by the hour, day, week, month or year.
- **Unlimited data storage** – Store unlimited weather data at the Central Control.
- **Cost Savings –** ET adjusted irrigation times apply only the water you need to replace the water lost from the soil reservoir. More efficient irrigation results in less water wasted for non-beneficial reasons resulting in reduced pump station operation, and lower energy costs.
- **Rain Bucket** – Allows rainfall from one day to be carried over to the following day(s) for more accurate ET calculations.
- **Multiple Station Capacity** – Connect up to five weather stations to one central control system for more precise ET values based upon different weather conditions around the golf course.
- **Max Rain Fall** – User-defined Max Rain Fall can be set to limit the amount of acceptable rainfall for clay soil types.

NOTE: *WS Pro LT will not generate alarms.*

How to Specify/Order:

WS-PRO-LT-XX-X

- ***Weather Station***
- ***Professional Series***
- ***Light model***
- ***Connection H : hardwire WL : wireless***
- ***Blank-cable S - solar***

RainGauge

Specifications

Collects rainfall information from field locations for use by the central control system.
Requires sensor decoder to connect to Central Control system.

How to Specify/Order:

RAINGAUGE

4" Rainfall Gauge

Product Features

- Accurate rain counter switch counts rainfall in 0,25mm increments
- Heavy-duty metal construction
- Mounting bracket.
- Debris screen
- diameter 10 cm

RAIN BIRD
1
2
3
RAIN BIRD

V-3100 Series
The economy line

Standard configuration has 2 or 4 pumps.

Available flow range up to 400 m^3/h.

Standard features include:

- Grundfos CR Vertical multistage centrifugal pumps.
- Closed type, High Efficiency, EFF1 motors, IP55, 3 X 400V, 50Hz, 2950rpm.
- Steel base frame.
- Green powder coated steel suction and discharge manifolds.
- Isolation valve for each pump.
- Check valve for each pump.
- Protective thermostat on each pump prevents motor from running too hot.
- Pressure transmitter in stainless steel.
- Hose point connection.
- Touch-button user interface shows actual operating conditions and alarms and allows for easy pressure setting adjustment.

V-3200 Series
The most commonly used line that is suitable for most golf course applications

Standard configuration has 2 to 6 pumps.

Available flow range up to 600 m^3/h.

Additional standard features include:

- Flow meter with electronic signal to the Control Cabinet. Allows maximum flow setting. In the event of this threshold being exceeded (for example a pipe burst) the pumps will automatically shut down.
- Automatic self-flushing cast-iron Y-strainer with PLC-controlled Over Pressure Relief valve. Adjustable flushing.
- Geared Main Isolation valve on pump station outlet.
- Jockey pump included for pump sizes CR64 and larger.
- Advanced touch-button user interface shows actual water flow, operating conditions and alarms and allows for easy pressure setting adjustment.

V-3300 Series
The high end line

Standard configuration has 2 to 6 pumps
Available flow range up to 600 m^3/h.

Additional standard features include:

- Independent Over Pressure Relief Valve.
- Jockey pump included for pump sizes CR45 and larger.
- Water-cooled heat exchanger on the control cabinet.
- RBSv Pump Manager software with modems.
- Advanced 3-phase control. Shows voltage and amperage and protect for over/under voltage, phase loss and phase reversal.
- Heat sensors in motors.
- Floating low water level switch.
- State of the art colour Touch-screen user interface shows actual operating conditions and alarms.

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Features

Testing
All Rain Bird pump stations undergo rigorous quality testing during manufacturing. This includes operating the completely assembled pump station at its designed capacity to ensure that it is water tested and calibrated.

Variable speed control
All Rain Bird pump stations use electronic Variable Speed technology. Variable Speed Controlled pump sets maintain a constant pressure against variable flow. Variable Speed Control provides a smooth automated start and stop of the pump station and an extremely quiet, low vibration operation.

All models use the same Variable Frequency Drive technology and all cabinets have the same basic design and standard components. This allows the use of RBSv Pump Manager (Standard in V-3300) and Smart Pump in all models.

Remote control from your PC through RBSweden Pump Manager Software
The RBSweden Pump Manager software offers the possibility to remotely control the pump station from a PC. The pump station is connected to the irrigation PC with Rain Bird 2x2,5mm^2 cable and two modems or via radio communication. This also allows for troubleshooting of the pump station from a remote location.

The possibility to direct link your Pump Station to your Central Control system through Smart Pump™
This exclusive software module available with Rain Bird Stratus LT, StratusII, NimbusII and Cirrus Central Control systems allows you to link your Rain Bird pump station directly with the irrigation Central Control system. Monitors and graphs both actual and controlled flow. Direct and real-time communication between the pump station and the Irrigation Central optimizes your irrigation cycle by adjusting flow demand according to actual field conditions.

How to Specify/Order:

Contact your Rain Bird sales representative to request a quotation with full specification for your specific conditions and requirements.

Services Available:

Options

The following options are available
Flow-meter for V-3100
Flow-meter with signal to the cabinet.
Isolation valves
Extra butterfly valves mounted on the suction side of the pumps. Main discharge butterfly valve on the V-3100 series.
Jockey Pump
A Jockey pump may be installed on the frame or in some cases supplied as a submersible unit. This pump will supply low water demands, for example when a hose is used or a single rotor is started manually, without a large pump having to start. Recommended when the flow from the station regularly may be lower than 10% of one of the main pumps. Jockey pumps are standard in the V-3200 series from CR64 pumps and standard in the V-3300 series from CR45 pumps.
Independent pressure relief valve
A Y-strainer with automatic flushing and PLC-controlled over pressure relief valve is standard on V-3200 and V-3300 series pump stations. For additional protection a pilot operated diaphragm type pressure relief valve may be installed as an option.
Low water lever switch
Floating water level switch with 10m cable.
Suction Parts
Suction parts include foot valve and PE couplings. Compression fittings for sizes up to 90 mm and electro fusion fittings for size 110 and larger. PE pipe is not included.
Priming Pump
A Grundfos priming pump model JP5 may be incorporated in the pump set, fitted with a manually operated three way valve, to prime the pump set following winter drain-down.
Prime maintenance
This option consists of a bypass from the pump station discharge connected to the suction side of the pumps to maintain pressure on the foot valve.
Stainless Steel
Both suction and discharge manifolds can be supplied in Stainless Steel, when aggressive water has to be used.
Pressure vessel
A pressure vessel may be supplied as a standalone unit.
Z-pipe
A Z-pipe for connection between the Pump Station and the irrigation main line can be supplied. Customized pipe with two 45° elbows, DIN flanges on both ends all in galvanized steel.
Control cabinet cooling
A water-cooled heat exchanger can be mounted on the control cabinet. A heat exchanger should be installed in areas where the temperature may exceed 40°C.
Rain Bird Sweden Pump Manager software
The Pump Manager software offers the possibility to remotely control the pump station from a PC. The pump station is connected to the irrigation PC with Rain Bird 2x2,5 mm2 cable and two modems or via radio communication.
Over-Voltage suppressor for communication cable and power supply at both PC and the Pump Station is included.
For higher protection use additional 2 x Rain Bird MSP-1.
Rotating Screen Control
Includes a DN25 solenoid valve for water supply to rotating intake screen.
Advanced 3-Phase control
This unit shows voltage and amperage and protect for over/under voltage, phase loss and phase reversal.
Heat sensors in motors
Protect and shut off the motor before overheating.
Soft starter
Soft starter instead of Y/D starter.

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S-3200 Series
The standard line that is suitable for most golf course applications.

Standard configuration has 2 to 4 pumps

Flow range up to 1000 m^3/h

Standard features include:

- Grundfos SP Submersible pumps
- Green powder coated steel discharge manifold
- Steel base frame
- Isolation valve for each pump
- Check valve built into each pump
- Pressure transmitter in stainless steel
- Hose point connection
- Flow meter with electronic signal to the Control Cabinet. Allows maximum flow setting. In the event of this threshold being exceeded (for example a pipe burst) the pumps will automatically shut down
- Automatic self-flushing cast-iron Y-strainer with PLC-controlled Over Pressure Relief valve. Adjustable flushing
- Geared Main Isolation valve on pump station outlet
- Jockey pump included for pump sizes SP60 and larger
- Advanced touch-button user interface shows actual water flow, operating conditions and alarms and allows for easy pressure setting adjustment

S-3300 Series
The high end line

Standard configuration has 2 to 4 pumps

Flow range up to 1000 m^3/h

Additional standard features include:

- Independent Over Pressure Relief Valve
- Jockey pump included for pump sizes SR46 and larger
- Water-cooled heat exchanger on the cabinet
- RBSv Pump Manager software with modems
- Advanced 3-phase control. Shows voltage and amperage and protect for over/under voltage, phase loss and phase reversal.
- Heat sensors in motors
- Floating low water level switch
- State of the art colour Touch-screen user interface shows actual operating conditions and alarms

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Features

Testing
All Rain Bird pump stations undergo rigorous quality testing during manufacturing. This includes operating the completely assembled pump station at its designed capacity to ensure that it is water tested and calibrated.

Variable speed control
All Rain Bird pump stations use electronic Variable Speed technology. Variable Speed Controlled pump sets maintain a constant pressure against variable flow. Variable Speed Control provides a smooth automated start and stop of the pump station and an extremely quiet, low vibration operation.

All models use the same Variable Frequency Drive technology and all cabinets have the same basic design and standard components. This allows the use of RBSv Pump Manager (Standard in S-3300) and Smart Pump™ in all models.

Remote control from your PC through RBSweden Pump Manager Software
The RBSweden Pump Manager software offers the possibility to remotely control the pump station from a PC. The pump station is connected to the irrigation PC with Rain Bird 2x2,5mm² cable and two modems or via radio communication. This also allows for troubleshooting of the pump station from a remote location.

The possibility to direct link your Pump Station to your Central Control system through Smart Pump™.
This exclusive software module available with Rain Bird Stratus LT, StratusII, NimbusII and Cirrus Central Control systems allows you to link your Rain Bird pump station directly with the irrigation Central Control system. Monitors and graphs both actual and controlled flow. Direct and real-time communication between the pump station and the irrigation Central optimizes your Irrigation cycle by adjusting flow demand according to actual field conditions.

How to Specify/Order:

Contact your Rain Bird sales representative to request a quotation with full specification for your specific conditions and requirements.

Services Available:

Options

The following options are available :
Jockey Pump
A Jockey pump may be installed. This pump will supply low water demands, for example when a hose is used or a single rotor is started manually, without a large pump having to start. Recommended when the flow from the station regularly may be lower than 10% of one of the main pumps. Jockey pumps are standard in the S-3200 series from SP60 pumps and standard in the S-3300 series from SR46 pumps.

Independent pressure relief valve
A Y-strainer with automatic flushing and PLC-controlled over pressure relief valve is standard on S-3200 and S-3300 series pump stations. For additional protection a pilot operated diaphragm type pressure relief valve may be installed as an option.

Low water level switch
Floating water level switch with 10m cable.

Stainless Steel
Discharge manifolds can be supplied in Stainless Steel, when aggressive water has to be used.

Z-pipe
A Z-pipe for connection between the Pump Station and the irrigation main line can be supplied. Customized pipe with two 45° elbows, DIN flanges on both ends all in galvanized steel.

Control cabinet cooling
A water-cooled heat exchanger can be mounted on the control cabinet. A heat exchanger should be installed in areas where the temperature may exceed 40°C.

Rain Bird Sweden Pump Manager Software
The Pump Manager software offers the possibility to remotely control the pump station from a PC. The pump station is connected to the irrigation PC with Rain Bird 2x2,5 mm² cable and two modems or via radio communication.
Over-Voltage suppressor for communication cable and power supply at both PC and the Pump Station is included.
For higher protection use additional 2 x Rain Bird MSP-1.

Lightning protection for Pump Manager
Over-Voltage suppressor for communication cable and power supply at both PC and the Pump Station.

Rotating Screen Control
Includes a DN25 solenoid valve for water supply to rotating intake screen.

3-Phase failure control
This unit shows voltage and amperage and protect for over/ under voltage, phase loss and phase reversal.

Heating element
In colder climates a 3kW heating element may be supplied.

Soft starter
Soft starter instead of Y/D starter.

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Self-Cleaning Rotating Pump Suction Screen

Function

Rain Bird's galvanized, Self-Cleaning Rotating Pump Suction Screen removes rubbish and debris from water sources, saving time and money in energy, pumping efficiency and maintenance costs. With a heavy 10 mesh (1,5 mm) stainless steel screen, this product will increase your pump efficiency for many years to come.

Specifications

- Heavy galvanized steel construction completely corrosion resistant with removable basket for service.
- Heavy stainless steel 10-mesh (1,5 mm) screen fabric covering.
- Dual rotating bars with jets continually blasting debris from screen.
- Several flanged connections available.
- Heavy bearing for long life.
- All-metal, non-plastic construction without exterior moving part for better reliability.
- "Y-strainer" providing easy access for cleaning and preventing the spray nozzles from plugging.
- No specific angle for operating.
- Supplied with standard US flanged connections.

How to Specify/Order:

PSS - XXXX

Model

200, 400, 600, 800, 1000, 1400, 1700

Performance Data									
Model	Flow m^3/h	Screen Length cm	Total Length	Sreen Diameter cm	Flange Size In	Return Inlet In	Minimum operating pressure bar	Weight Kg	Flow needed for Cleaning Sprays m^3/h
PSS200	74	28	64	41	4	1 1/2	2,4	26,3	4,6
PSS400	125	38	73	41	6	1 1/2	2,8	28,1	4,6
PSS600	170	41	83	61	8	1 1/2	2,8	46,3	4,6
PSS800	216	46	88	61	10	1 1/2	3,1	52,2	4,6
PSS1000	307	58	100	61	10	1 1/2	3,5	55,8	5,4
PSS1400	375	66	108	61	12	1 1/2	3,8	59,4	5,4
PSS1700	443	71	113	66	12	1 1/2	3,8	67,1	5,4

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Automatic Backwashing Screen Filter

Function

Minimum Maintenance: The permanent stainless steel filter screens require no maintenance. In addition to the automatic backwashing cycle, the filter canisters and screens have no internal moving parts to wear out, break down or replace.

Patented Backwashing System: Powered by source line water pressure, the filter's patented backwashing valve system diverts a portion of the clean water produced by the system to the filter unit undergoing backwashing. This reverse flow of filtered water frees contaminants from the filter screens. Each filter canister is sequentially backwashed until the entire system is cleaned.

Automatic Dual Monitoring: This filtration system is automatically monitored either on elapsed time since the last backwashing or pressure differential. This results in a low pressure drop and consistent high quality produced water.

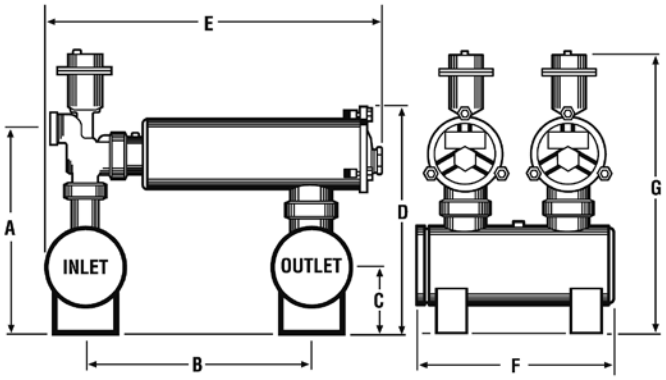
Long-Lasting Construction: The Automatic Backwashing Screen Filter is built for years of durable, trouble-free service. The filter canisters are constructed of carbon steel, which is fusion epoxy lined as a standard feature. The carbon steel manifolds and the cast iron backwash valve are also fusion epoxy lined.

Easy field Service: A patented backwash valve features stainless steel valve trim and a field-replaceable polyurethane valve sealing element. The backwash valves also feature external lubrication fittings for easy field service. In fact, the unit is totally field rebuildable.

How to Specify/Order:

BSF - X - X

Screen diameter ***Nombre of screens***



Specifications

- Heavy-duty, durable, low-cost automatic screen filtration system.
- Flow rates from 57 to 450 m^3/hr.
- Standard maximum operating pressure: 10 Bar.
- Rugged, permanent, stainless steel wedge wire screens available in sizes 420, 300, 180, 150 or 105 micron.
- Vertical configurations available for limited space applications.
- Large screen area provides long runs between backwash cycles.
- Filtered, clean water backwashing automatically initiated by time or pressure differential.
- Flanged inlet and outlet configuration.
- Optional solar package and DC latching solenoid available. Solar package includes a solar panel, battery pack, metering system, wiring harness and enclosure box.
- No moving parts inside the filter canister to wear out.
- Stainless steel filter cartridge requires no maintenance.

Performance Data										
Model	Max. Flow (M^3/h)	Inlet/ Outlet	Flush Line	A (cm)	B (cm)	C (cm)	D (cm)	E (cm)	F (cm)	G (cm)
BSF6-2	57	4	2	47.2	68.3	15.3	50.8	108.0	69.3	71.1
BSF8-2	102	6	2	57.5	61.3	20.3	63.7	101.9	71.8	81.4
BSF8-3	170	6	2	57.5	61.3	20.3	63.7	101.9	105.1	81.4
BSF10-2	277	8	4	71.4	124.0	22.9	78.0	170.8	78.4	97.0
BSF10-3	340	8	4	71.4	124.0	22.9	78.0	170.8	117.2	97.0
BSF10-4	450	10	4	76.7	124.0	25.4	83.2	170.8	158.4	102.2
The maximum operating pressure is 10 Bar										

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LAKE MANAGEMENT AERATORS AND FOUNTAINS

Application

A growing global trend is to install surface or subsurface aerators in ponds or lakes that are less than 15 feet (5m) deep. Aerators provide the best vertical circulation to add dissolved oxygen to the water.
When a lake or pond loses its ecological balance, the effects or symptoms are readily apparent:
- Unsightly algae build-up
- Aggressive weed growth
- Unpleasant odor
- Depleted fish populations

If this water source is used to supply an irrigation system, the effects are compounded both functionally and aesthetically:
- Clogged sprinkler heads, valves and pumps
- Damaged Turf
- Loss of water storage capacity
- Odors, fish kills and insect breeding
- Diminished aesthetic appeal

Benefits

With the addition of dissolved oxygen into the water and the resulting convection patterns that reduce stratification, aeration systems impacts three factors:
- Oxygen: aerating the water encourages aerobic digestion of nutrients by adding oxygen, which significantly reduces sediments/sludge build-up
- Nutrients: potentially harmful nutrients are kept in ecological balance through oxidation and de-stratification
- Temperature: mixing warmer surface and cooler bottom water with dissolved oxygen breaks down stratification to further enhance the ecological balance of adding carbon dioxide at lower levels

Models

- **Instant Fountains**
  These floating fountains are available in an 1 HP. Units have three attractive interchangeable spray patterns. Light options available.

- **Aerating Fountains**
  Available in 1, 2, 3 and 5 HP and 9 different patterns. Aerating fountains are designed to improve water quality as well as be aesthetically pleasing.

- **Large aerating fountains**
  Available in 7, 5 and 10 HP and 6 different patterns.

- **Industrial aerators**
  Available 1, 2, 3 and 5 HP. Sub-Surface units are designed to work in settings where no fountain feature is desired.

- **Air Flo systems**
  These systems consist of a ¾ HP compressor and diffuser manifolds.

Instant Fountains

Aerating Fountains

Large aerating fountains

Industrial aerators

Services

Rain Bird Services
TRAINING

YOUR TRUSTED GUIDE TO COMPLETE IRRIGATION SOLUTIONS

Planning and managing a fully integrated, working irrigation system can be overwhelming. From initial site assessment, through installation and on-going system management, any missteps can cause delays and added cost. Choosing the right direction can be difficult, and wrong decisions affect quality and your bottom line.

Rain Bird can help you choose, implement, and manage the right irrigation solution. Our trained experts work with you to define your needs and propose solutions. Rain Bird is a global company, with resources throughout the world ready to help you through whatever challenges you encounter.

Rain Bird Can Guide You down the Right Path

We understand how complex it can be to plan and/or manage an irrigation system. You may not always know what your needs are, and may receive differing input. Correct decisions control costs and produce high quality results. Rain Bird can guide you to the right solution.

- Rain Bird has a complete range of expertise, leading edge technology, and global best practices.
- Proper design, product selection, product installation, product use, and properly trained staff produce aesthetic quality in the landscape environment, result in managed operating costs and efficient use of precious water resources.

A Global Solution – Managing All Aspects or Specific Areas of Customer Needs Throughout the World

Rain Bird is the only global provider of irrigation products and business solutions. We have more people, technical service centers and warehouses located around the world than any other irrigation company, and we utilize those resources in providing solutions for our customers across the globe.

Consulting Services

Rain Bird can provide a variety of services to ensure your system is intelligently designed and managed for maximum water savings, optimum performance, and outstanding reliability year after year.

- System and site assessment services
- Water management Consulting
- Education & training
- Design services

Integration Services

Rain Bird is expert at putting all the different system components together so they operate efficiently, reliably, and cost effectively for years.

- System & Product integration

Implementation Services

The best designed system is only as good as the quality of the installation. Rain Bird can manage the system installation and start up processes to ensure your investment works as it was designed to work.

- Pump station installation & start up
- System installation services
- Setup & Commissioning

Managed Services

Rain Bird can ensure return on your investment is maximized through industry best management and maintenance practices.

- Central Control management
- Maintenance services
- On-site Field services
- Site supervision

We'll guide you to irrigation solutions.
Consult your local Rain Bird Sales Representative for service availability

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Rain Bird Academy Program

Rain Bird Academy offers a comprehensive selection of irrigation training courses for the golf course superintendent. Training classes can be valuable to the success of your organization as it is important to learn new troubleshooting techniques, operations and skills and refresh existing knowledge.

Training Programs

- **Irrigation System – Level I (1 day)**
  Learn the basics of hydraulics as they apply to an irrigation system. Sizing pipes/valves. Calculate friction loss within pipes and fittings. Calculate system pressure requirement.

- **Programmer implementation - 230 V and 9 V (1 day)**
  All you need to know about controllers.

- **Advanced Irrigation Design – Level II (1 day)**
  High level design course that requires a working knowledge of hydraulics and design.

- **Irrigation systems with decoders (1 day)**
  You will learn how to operate decoder systems.

- **Water Conservation and management (2 days)**
  Learn and master the factors that influence water consumption for-grass areas in order to optimize irrigation.

- **Pumping systems (1 day)**
  Learn how to choose, install and maintain a pumping station.

- **Golf MAXI® software (Stratus™, Nimbus™ and Cirrus™) – level 1 (1 day)**
  This course is designed to support the growth and development of the most advanced users. This level will help users capitalize on the full capability of their irrigation control system.

- **Golf MAXI® software (Stratus™, Nimbus™ and Cirrus™) – level 2 (1 day)**
  Advanced programming of RAIN BIRD Golf centralized management software.

Features

- Our dedicated group of experts have many years of irrigation and training experience.
- Class size can range from 8 to 25, depending on the course
- Fee includes: logistic, facilities, lunch and snacks, educational support and materials.
- Contact your Rain Bird representative to get the annual schedule and to learn about our customized training sessions.

Please visit www.rainbird.eu/training
or e-mail services@rainbird.fr

Irrigation System Design

Wide-ranging experience: residential, public, building and hotel complexes, sports fields and farming.

- The leader in the field of pumping stations and central control systems.
- Rain Bird's comprehensive product range ensures the best technicaL solutions.
- Design rules based on water-saving principles : Rain Bird's designs incorporated the concept of Intelligent Use of Water long before this concept became widespread.

Features and Benefits

- Irrigation system layout design
- Detailled bill of quantities with all the products necessary for the project
- Hydraulic calculations

Irrigation auditing

- Irrigation auditing is a proven method to effectively maximize the usage of water within automatic irrigation systems, such as golf courses, urban landscape commercial properties and sports fields.
- Rain Bird customers have seen the benefits of including an irrigation audit into water conservation programs, with reduced water consumption and improved overall efficiency to their irrigation systems.
- Rain Bird irrigation audits consist of three main activities: system inspection from reservoir to sprinkler, performance testing and irrigation scheduling. Each activity in itself can result in significant water and energy savings.
- The Rain Bird audit service consists of an onsite technical inspection concluding in a detailed report based upon the analysis of the measurements carried out on site.

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Global Service Plan

A Rain Bird service plan ensures the proper functioning and the reliability of your central control system and your pump station

- Your irrigation system will work efficiently and reliably, optimizing water consumption.
- We keep your investment safe by maintaining your equipment and keeping it in top condition.
- We provide expert training and offer permanent support to your team.

FEATURES AND BENEFITS

- **Technical telephone support**

  Rain Bird's technical support gives you direct and preferential access to our irrigation system and central control system experts. In addition to telephone support, our specialists can also fax or e-mail you any written document issued from our Rain Bird technical library.

- **Remote System Diagnostics**

  allows you to connect to a remote system to execute diagnostics, preventative maintenance or corrective maintenance in real time System Operation Vacation Cover® gives you pre-scheduled daily remote connection to ensure your system runs smoothly while your system operator is on vacation.5 days/year included.

- **Data storage**

  carried out during Remote System Diagnostics, it allows you to protect and reuse your data.

- **Software Service Packs**

  give you the newest central control service packs at no extra charge.

- **Software upgrade**

  Keep your central control software current with the latest Version enhancements at no extra charge. GSP subscribers receive an additional discount on the cost of any Rain Bird module software feature enhancement upgrade.

- **48h hardware replacement**

  If any RAIN BIRD central control hardware component* fails, a replacement part will be delivered to a GSP subscriber within 48h with the benefit of a 25% discount on our current board exchange program list price. GSP Subscription includes a 25% Discount on the GSP replacement parts list price. Support PC in the event your central control PC becomes inoperable, a 30 day loaner PC with your Central Control software will be delivered to your site within 48hrs with pre installed Rain Bird software including database of last backup.

- **Discounts For Board Exchange**

  48 hour replacement of main components of the system.

- **Central Control Software Upgrade Discount**

  reduces the expense of upgrading your system.

- **Guaranteed annual subscription price for the duration of the contract**

  (with a multi-year binding subscription).

- **One on site maintenance visit per year**

  to provide on site central control system and pump station maintenance. Our specialist will come to your site on a predetermined date to carry out annual

preventative maintenance on the central system or the pump station. The specialist will perform functional tests, diagnostics and adjustments, as well as provide additional training. Companies that subscribe to the GSP Annual Maintenance Contract are given priority status for planning interventions for corrective maintenance. They also receive a preferential rate on the charges.

- **The Options Include :**

  Provision of a new computer and new peripherals, installed in our facility and the transfer of data from the existing system during the last year of the contract.
  Subscription to one of the basic contracts for 3 years is a requirement for these options.

Rain Bird offers a comprehensive service plan that covers your Central Control and Pump Stations

GSP Standard Plan
- Hotline Telephone support
- Certified Start-Up
- Remote off-site assistance
- Data backup
- Software upgrade
- Discount on 48h board exchange list price.
- Discount on GSP parts replacement list price
- Support PC within 48hrs
- Discount on additional site visit list price

GSP+ Plan
- Customized System Operation Vacation Cover®
- Customized On-Site options

Options
- 1 year PC plan
- 3years PC Plan
- GSM/3G internet

Other available Services
- Customised Training
- Project Design
- System installation
- Spare Parts
- System Maintenance

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Rain Bird Electronic Board Standard Exchange Program

The Rain Bird Electronic Board Standard Exchange Program is a quick, economical and reliable way to replace interfaces or electronic boards of a system that is no longer available. Through distributors and contractors Rain Bird can replace a defective board with a reconditioned and tested board in the shortest timeframe possible.

Features

1/ Operation

As soon as we receive the defective electronic board and the "Standard Exchange Program" order, we agree to:- Replace the defective eletronic board with an equivalent model.- Check the operation of the replacement electronic board.- Ship the replacement hardware with in a maximum of 48 hours.

2/ Application Conditions

- Only hardware on the Board Exchange Program list is eligible for the Standard Exchange Program.
- This program is not applicable to hardware with the following defects: Rusted electronic board / Cracked electronic board / Burned electronic board / Damaged tracks / Missing electronic component.

3/ Warranty

- All of our standard exchanges are guaranteed for 6 months from the shipping date, based on the terms and conditions of the Rain Bird warranty.
- The warranty period is indicated on the sticker placed on the hardware. The warranty is void if this sticker is removed or erased.

4/ Terms and Conditions

- The prices indicated include the replacement hardware, packaging and return shipping.
- Cables, housings and connectors are not included in the Standard Exchange Program and, if possible, should not be returned to us.
- Prices are subject to change without notice.
- No credit note will be issued and no hardware will be taken back if exchanged hardware is not used.
- We will do our utmost to ensure that we have the hardware that is eligible for the Standard Exchange Program in stock; however this does not always guarantee immediate availability of all hardware.
- Always guarantee immediate availability of all hardware.
- The replacement hardware provided for the Standard Exchange Program can be new or reconditioned.

GPS Mapping Service

- GPS mapping service provides 2-D & 3-D sub-meter level survey mapping covering a variety of application options using the latest GPS measurement technology. We keep your investment safe by maintaining your equipment and keeping it in top condition.
- Rain Bird GPS mapping provides you with a detailed survey drawing covering the irrigation system components relevant to your site.

Detailed Survey Advantages

- Acquisition of accurate site measurement data, area (m^2) of turf areas and irrigation system components covering all the requested areas greens, fairways, tees, etc...
- Completed surveys can be used for planning of global projects such as landscape park or golf course design layout changes. Also assists with any modification works to existing infrastructure such as drainage and irrigation systems.
- Provides an excellent marketing tool for use in on-line demos, brochures, scorecards, etc...
- Detailed geographic data assists in reducing costs related to grounds maintenance practices by providing accurate area information for example fertilizer application. GPS data can increase the efficiency and thereby reduce energy costs of an irrigation system with integration of accurate sprinkler information within the control system.
- Overall digital site data can be integrated into the irrigation control system, which supports visual map functionality.

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Retrofit Pump Control Solution Package for Pump Stations

Renovate with Rain Bird's retrofit pump control panel solution and gain from your investment immediately. Utilizing the latest technology will improve reliability, efficiency and reduce operating costs.

Description:

Standard Retrofit Pump Control Panel Solution controls a pump or one of the existing main duty pumps via a new variable speed control (VFD) unit. Three additional duty pumps plus one Jockey pump can be integrated into the standard solution utilizing existing electrical equipment. Additional pumps can be controlled by expanding the PLC module which increases total control capability up to ten pumps plus one jockey pump. Six Retrofit Pump Control Panel Solution options based upon motor size ranging from 5.5 kW to 22 kW. Not compatible with submersible pumps.

Package Components:

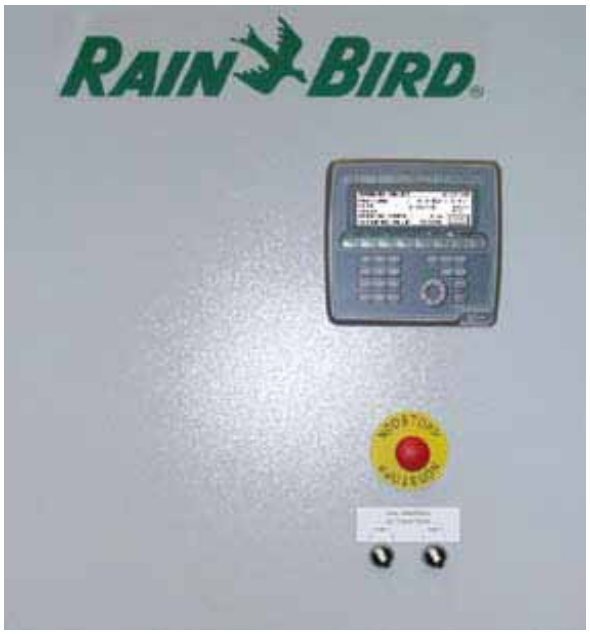
- Variable Frequency Drive unit including approved EMC filter
- Rain Bird Touch Button Operator Panel E1032
- Programmable Logic Controller (PLC) with Rain Bird intelligent pump control application
- Pump one VFD shielded supply cable
- Emergency stop function all pumps
- Over voltage surge protection 230V control circuit
- 230VAC/24VDC low voltage control circuit transformer
- Automatic fuse for control voltage
- Control enclosure, IP55 protective index
- Power cable shielded from existing panel to new panel
- Pressure transmitter including shielded control cable
- PLC-controlled high pressure relief DN25 or DN40 including shielded control cable
- Signal link control cables to existing pumps

Features:

Variable Frequency Drive controlled pump - Maintains constant pressure against variable flow and provides smoother automated start/stop of the pump station with reduced vibration during operation.

Rain Bird Operator Panel – End user interface to interact with the pump station in an easy and efficient way.
The operator needs only to provide minimal input to maximize the features listed after.

- System Pressure
- Stainless steel pressure transducer for maximum durability
- Individual Pump operational status
- Individual Pump logging run hours
- Pump System logging run hours
- Historical flow curves (flow meter required)
- Historical Pressure curves
- Alarm condition with date/time stamp
- 2 Pressure operation set points. (used for systems with old pipe networks or sites with different elevation)
- Automatic PLC-controlled high pressure relief - pressure spike reduction
- Main parameter tracking



Rain Bird Tech services:

- On site installation of all Pump Control Solution Package products/equipment as listed above in the above under Package Components generally consisting of cabinet, control devices plus necessary pipe work alterations to incorporate pressure transmitter and PLC controlled high pressure relief valve. On site installation of all products/equipment listed in Additional Features also available.
- Initial start-up of the pumping station prior to completion of above works generally covering electrical connection check, hydraulic pipe connection check, starting of the PS for the first time and necessary adjustments.
- Plus detailed report forwarded to client outlining electrical operational measurements, final PS configuration settings at Pump Station maximum capacity and training to the end user.

The Intelligent Use of Water™

At Rain Bird®, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit www.rainbird.com for more information about The Intelligent Use of Water™.

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